Scope of Work
for
Contract No. DACW45-89-D-0506
Stack Emissions (Lead) Removal
Granite City (Madison County), IL
Delivery Order 17

June 1994
Final Revised

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01402	Chemical Quality Management

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02100	Clearing and Grubbing
02210	Grading
02220	Excavation, Backfill, and Compacting
02552	Portland Cement Paving
02935	Turf

SCOPE OF WORK
FOR
CONTRACT NO. DACW45-89-D-0506
PREPLACED REMEDIAL ACTION CONTRACT (OHM)
GRANITE CITY, IL

1. INTRODUCTION. The NL site is the location of a former secondary lead smelting facility. Metal refining, fabricating, and associated activities have been conducted at the site since before the turn of the century. Prior to 1903, the facilities at the site included a shot tower, machine shop, factory for the manufacture of blackbird targets, sealing wax, manufacture of mixed metals, refining of drosses, and the rolling of sheet lead. From 1903 to 1983, secondary lead smelting occurred on-site. Secondary smelting facilities included a blast furnace, a rotary furnace, several lead melting kettles, a battery breaking operation, a natural gas-fired boiler, several baghouses, cyclones and an afterburner. Secondary lead smelting operations were discontinued during 1983 and equipment dismantled.

1.1. In July of 1981, St. Louis Lead Recyclers, Inc. (SLLR) began using equipment on adjacent property owned by Trust 454 to separate components of the Taracorp waste pile. The objective was to recycle lead bearing materials to the furnace at Taracorp and send hard rubber and plastic off-site for recycling. SLLR continued operations until March 1983 when it shut down its equipment. Residuals from the operation remain on Trust 454 property as does some equipment.

1.2. A State Implementation Plan for Granite City was published in September 1983 by the Illinois Environmental Protection Agency (IEPA). The IEPA's report indicated that the lead nonattainment problem for air emissions in Granite City was in large part attributable to emissions associated with the operation of the secondary lead smelter operated by Taracorp and lead reclamation activities conducted by SLLR. The IEPA procured Administrative Orders by Consent with Taracorp, St. Louis Lead Recyclers Inc., Stackorp, Inc., Tri-City Truck Plaza, Inc., and Trust 454 during March 1984. The orders required the implementation of remedial activities relative to the air quality.

1.3. NL Industries (NL), as former owner of the site, voluntarily entered into an Agreement and Administrative Order by Consent with the U.S. Environmental Protection Agency (U.S. EPA) and IEPA in May 1985 to implement a Remedial Investigation and Feasibility Study (RI/FS) for the site and other potentially affected areas. Taracorp was not a party to the agreement due to the fact that it filed for bankruptcy. The U.S. EPA determined that the site was a CERCLA facility and it was placed on the National Priorities List on June 10, 1986.

2. SITE VISIT. On December 13-15, 1993, personnel from the Corps of Engineers, Chicago District and U.S. EPA, Region V conducted a preliminary site visit with the Corps of Engineers, Omaha District (Fort Crook On-Site Representative) and OHM Corporation to review on-going work.

2.1. A Scope of Work for Rapid Response was implemented by OHM, DACW45-90-D-9516 (Delivery Order No. 58) on January 27, 1993.

2.2. The award of a Delivery Order to OHM, DACW45-89-D-0506 (DO No. 16)

is to provide immediate contractor continuity to minimize immediate exposure of stack emissions in the soil.

3. DESCRIPTION. The remedial action shall require the removal of lead contaminated soil (RCRA special waste - total lead > 500 ppm, TCLP lead < 5 mg/L) from approximately 70 residential sites (where rights-of-way are still being secured). A typical site would be an occupied residential lot approximately 54' x 140' (7,560 square feet) with buildings, driveways, and sidewalks, totaling approximately 2,360 square feet.

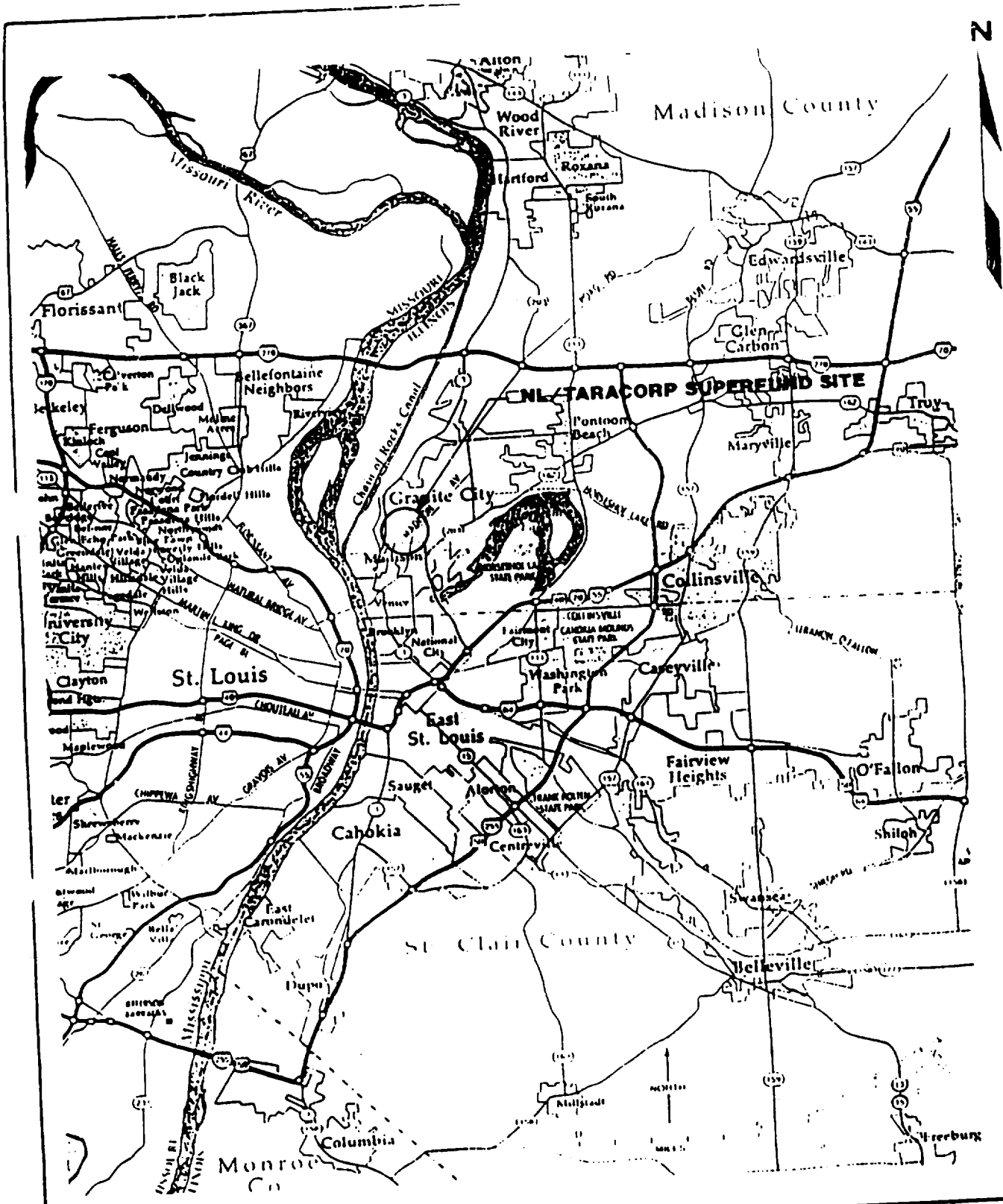
3.1. The lead contaminated soils comprising approximately 5,200 square feet of sod, flower beds, and garden shall be pre-characterized for RCRA Disposal Requirements, removed up to a depth of 3", 6" or 12" and the entire area shall be restored to its original condition using commercial topsoil and sod. The sod shall be maintained for a period of 30 days. Fencing, sidewalks, flowers, shrubs, and other items removed or damaged by the operations shall be replaced to the owner's satisfaction, as directed by the on-site U.S. EPA Field Representative.

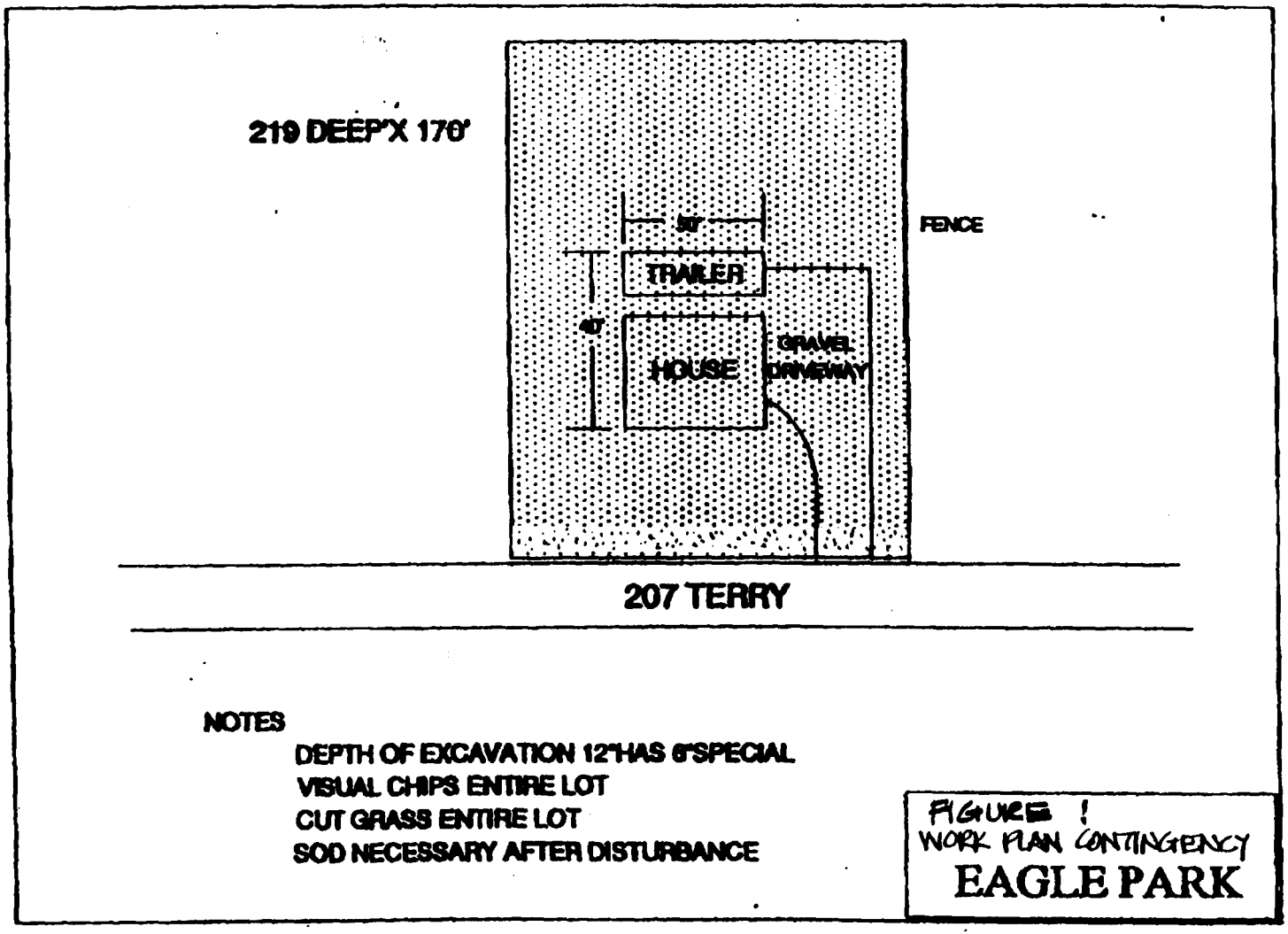
3.2. Special waste shall be removed, transported and disposed of in an authorized disposal facility in accordance with all DOT, EPA, and OSHA regulations.

3.3. Contingent plans shall be developed in the Work Plan in the remote chance hazardous waste (Lead TCLP > 5 mg/l) is encountered during the operations at stack emission sites or a return to Eagle Park or Venice Alleys (Figures 1 and 2).

3.4. Staging/office area is located at 370 Old Rock Road, Granite City, Illinois, shall be used for the Contractor's activities. Utilities will be paid by OHM.

3.5. Personal Protective Equipment (PPE) - tyvek - shall be gray in color.

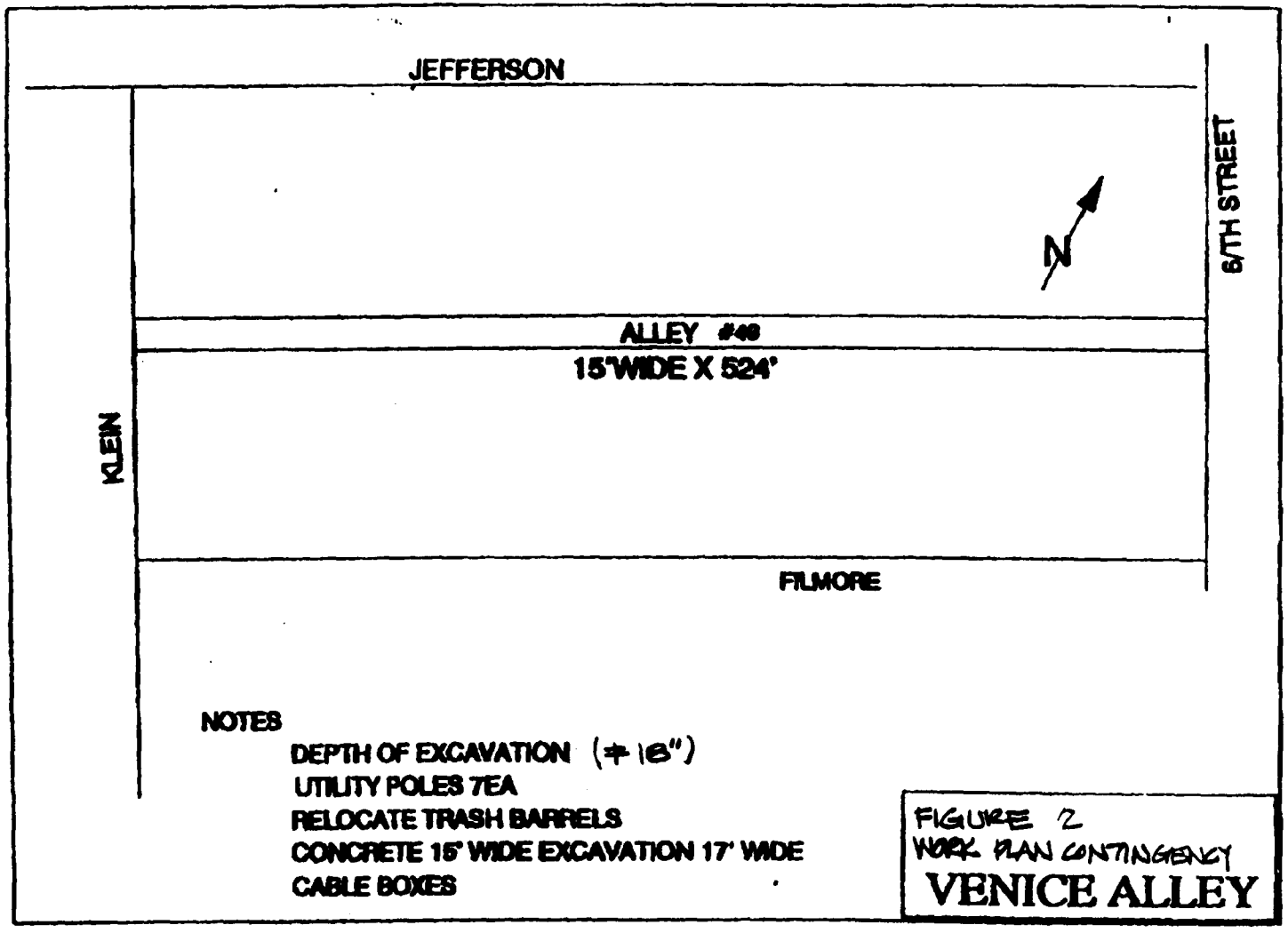

N
Madison County
Wood River
Roxana
Missouri River
Black Jack
Florissant
Edwardsville
Glen Carbon
NL/TARACORP SUPERFUND SITE
Granite City
Pontoon Beach
Troy
Maryville
Collinsville
Caseyville
St. Louis
Clayton
East St. Louis
Fairview Heights
O'Fallon
Sauget
Cahokia
Centreville
Shiloh
Swansea
Belleville
St Clair County
Columbia
Monroe Co
Site Location
NL/TARACORP SUPERFUND SITE
U.S. ARMY CORPS OF ENGINEERS
GRANITE CITY, ILLINOIS
PROJECT NO
Site Location Map
FIG NO



NOTES

DEPTH OF EXCAVATION 12"HAS 6"SPECIAL
VISUAL CHIPS ENTIRE LOT
CUT GRASS ENTIRE LOT
SOD NECESSARY AFTER DISTURBANCE

FIGURE 1
WORK PLAN CONTINGENCY
EAGLE PARK


JEFFERSON
6/TH STREET
N
ALLEY #48
15'WIDE X 524'
KLEIN
FILMORE
NOTES
DEPTH OF EXCAVATION (± 18")
UTILITY POLES 7EA
RELOCATE TRASH BARRELS
CONCRETE 15' WIDE EXCAVATION 17' WIDE
CABLE BOXES
FIGURE 2
WORK PLAN CONTINGENCY
VENICE ALLEY

4. CONTRACTING-ENGINEERING-CONSTRUCTION ADMINISTRATION DATA.

4.1. Contracting Branch (Proposal Submission)
Donald Daubman
U.S. Army Engineer District - Omaha
ATTN: CEMRO-CT-H (Daubman)
215 North 17th Street
Omaha, NE 68102-4978
(402) 221-4113
(402) 221-4530 (FAX)

4.2. Contracting Specialist
Mel Vogt
U.S. Army Engineer District - Omaha
ATTN: CEMRO-CT-H (Vogt)
215 North 17th Street
Omaha, NE 68102-4978
(402) 221-4298
(402) 221-4530 (FAX)

4.3. Preplaced Remedial Action Contracts (PPRA)
Alvin Kam
U.S. Army Engineer District - Omaha
ATTN: CEMRO-ED-ER (Kam)
215 North 17th Street
Omaha, NE 68102-4978
(402) 221-7758
(402) 221-7793 (FAX)

4.4. Environmental Technical Manager
Eugene Liu
US Army Engineer District - Omaha
ATTN: CEMRO-ED-ED (Liu)
215 North 17th Street
Omaha, NE 68102-4978
(402) 221-7169
(402) 221-7796 (FAX)

4.5. Environmental (Superfund) Project Manager
John Cataldo
US Army Engineer District - Omaha
ATTN: CEMRO-MD-HS (Cataldo)
215 North 17th Street
Omaha, NE 68102-4978
(402) 221-7708
(402) 221-7738 (FAX)

4.6. Construction Division - District Office (Field Supervision)
Charles Savage
US Army Engineer District - Chicago
ATTN: CENCC-CO-A (Savage)
111 North Canal Street, 6th Floor
Chicago, IL 60606-7206
(312) 353-6440

(312) 353-2141 (FAX)

4.7. Delivery Order Transfer to Rock Island District (Contract Administration)
Janet Hall
US Army Engineer District - Rock Island
ATTN: CENCR-CT (Hall)
Clock Tower Building
Rock Island, IL 61204-2004
(309) 794-5312
(309) 794-5172 (FAX)

4.8. US EPA, Region V
ATTN: Brad Bradley
77 West Jackson
Chicago, IL 60604
(312) 886-4742
(312) 886-4071 (FAX)

4.9. Illinois EPA
c/o Brian Culnan
2200 Church Hill Road
Springfield, IL 62794-4193
(217) 782-9872

5. COST PROPOSAL. The Scope of Work shall be awarded as a Cost Plus Fixed Fee (CPFF) Delivery Order. The Contractor shall not be reimbursed or expenditures incurred during the Cost Proposal, Site Visit or Site-Specific Advance Agreement preparation and negotiations. The Delivery Order Cost Proposal shall be prepared on this Scope of Work. The Cost Proposal shall provide a time-phased breakdown for each "TASK" based on Direct Costs including labor, equipment, materials, subcontractors and other indirect overhead costs.

5.1. The Contractor shall provide sufficient cost and pricing data in the Cost Proposal, including catalog and/or market prices. For subcontracting greater than $10,000, the Contractor shall provide independent quotes and justification for selection.

5.2. The Contractor shall provide a Small and Disadvantaged Business Plan which expects substantial utilization of small business.

5.3. The Contractor shall provide a proposed work sequencing chart for the scheduled work.

5.4. Task Identification. Refer to Appendix A.

5.5. Per Diem for Madison County, IL is $74.00 ($48/$26).

6. ASSUMPTIONS. (Attachment of Contractor's specific items per cost proposal)

APPENDICES

Appendix A	Stack Emissions Removal Task Identification
Appendix B	Construction Management Index
Appendix C	Record of Decision Summary
Appendix D	State of Illinois Regulations
Appendix E	Usage Rates

NOTE: Existing work plans completed under Rapid Response Delivery Order No. 58 shall be modified for this similar follow-on work. (Copies not included with this Scope of Work).

APPENDIX A

STACK EMISSIONS REMOVAL
TASK IDENTIFICATION

APPENDIX A
STACK EMISSIONS REMOVAL
TASK IDENTIFICATION

1. HOME OFFICE SUPPORT. Shall include, but not be limited to:

1.1. Three management site visits for project oversight, control, and ensure safe operations.

1.2. Modifications of existing plans.

1.2.1. Work Plan.

1.2.2. Health and Safety Plan.

1.2.3. Sampling Plan.

1.2.4. Waste Management Plan.

1.2.5. Final Report (Draft and Final).

1.3. Preconstruction Meeting.

2. MOBILIZATION. Shall specify the equipment, personnel, material, the respective location from which mobilization will occur, and anticipated travel time.

3. CONSTRUCTION SUPPORT: On-Site.

3.1. Administration and Support shall include 15 weather days

3.2. Crew Rotation.

3.3. Weather Days (15).

4. SITE WORK.

4.1. Typical Site.

4.1.1. Excavation and Disposal

4.1.1.1.	Special Waste (assume 12" depth)	231.6 CY
4.1.1.2.	Other vegetation (shrubs)	4 CY

4.1.2. Restoration

4.1.2.1.	Backfill, Compact, Grade	154.8 CY
4.1.2.2.	Topsoil (assume 4" depth)	76.4 CY
4.1.2.3.	Sod (including 30-day maintenance)	580 SY

4.1.2.4. Shrubbery (allowance of $500)

4.2. Total 70 sites.

5. OTHER.

5.1. Remove/dispose of concrete sidewalks and driveways. 345 SY/40 CY (Assume 5% or 5 sites @ 69 SY x 4 inches or 7.7 CY)

5.2 Restoration of concrete sidewalks and driveways (5 sites) 345 SY/40 CY

5.3 Restoration of crushed rock surfacing for driveways. (5 sites) 57 CY (Assume 5 sites at 69 SY x 6 inches or 11.5 CY).

5.4 Decontamination Water (Assume excavating equipment wrapped in visqueen for site-to-site movement. Decon requirements for equipment preparation for repair off-site and DEMOB. 1,500 GAL

6. SAMPLING AND ANALYTICAL.

6.1. Backfill. (Assumes three different source areas will be sampled).

	Samples	Dups
Halogenated VOA	3	
Aromatic VOA	3	
PAC	3	
Oil and grease	3	
TRPH	3	
TCLP - Cd, Cr, Pb	3	
Pesticides	3	

6.2. Decontamination Water

	Samples
Solids	2
RCRA (minus TCLP)	2
Total metals	2
Volatile organics	2
Semivolatile	2
Pesticides/PCBs	2
Herbicides	2
Compositional Test	2
TCLP Inorganic & Organic	2

7. DEMOBILIZATION (mirror MOB).

8. OTHER. Submittals with proposal.

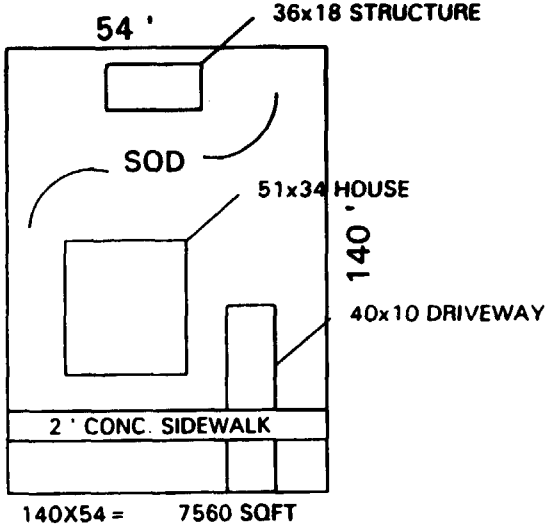
8.1. Identification/description of primary disciplines.

8.2. Proposed project organizational chart.

NL INDUSTRIES/TARA CORPORATION
GRANITE CITY, ILLINOIS
STACK EMISSIONS PEOJECT
1300 LOTS

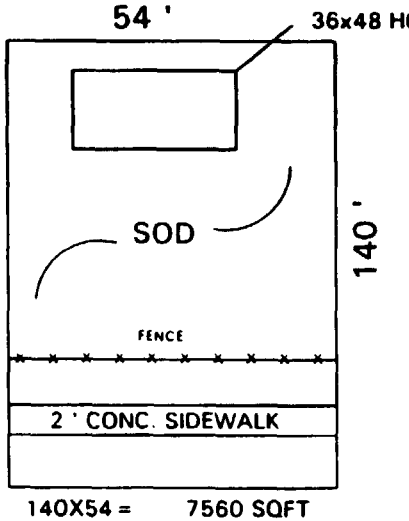
NOTE: ON 20 OCTOBER 1993, BRAD BRADLEY OF THE USEPA POINTED OUT TWO RESIDENTIAL LOTS IN THE VICINITY OF GRAND AVE. AND 26TH STREET IN GRANITE CITY. THE TWO LOTS WERE TYPICAL REPRESENTATIONS OF 1300 LOTS TO BE REMEDIATED UNDER THIS STACK EMISSIONS PROJECT. THE LOTS WERE MEASURED BY DAVE STRICKLAND OF OHM AND JIM MCNULTY OF USACE AND A JOINT AGREEMENT TO THEIR CONDITION WAS REACHED.

LOT 1



140X54 =	7560 SQFT
HOUSE =	-1734 SQFT
STRUCTURE =	-648 SQFT
DRIVEWAY =	-400 SQFT
SIDEWALK =	-108 SQFT
TOTAL	4670 SQFT

LOT 2



140X54 =	7560 SQFT
HOUSE =	-1734 SQFT
SIDEWALK =	-108 SQFT
TOTAL	5718 SQFT

4670 + 5718 SQFT = 10388 / 2 = APPROX 5200 SQFT

5200 SQFT = 578 SQYD @ 12" = 192 CUYD EXCAVATED SPECIAL WASTE

THE DEPTH OF ECAVATION OF EACH PARTICULAR LOT WILL PREDETERMINED BY USEPA BASED ON PREVIOUS INVESTIGATIONS.

APPENDIX B

CONSTRUCTION MANAGEMENT INDEX

1. Correspondence

1.1 The Contractor shall send all correspondence, original plus one copy, regarding this delivery order to:

USACE - Chicago District
ATTN: CENCC-CO-A (Savage)
111 North Canal Street (6th Floor)
Chicago, IL 60606-7206
(312) 353-6440

An information copy shall be simultaneously mailed to:

USACE Resident Engineer
370 Old Rock Road
Granite City, IL 62040

1.3 An additional copy shall be provided to the on-site Government Inspectors.

2. Submittals

2.1 The Contractor shall submit prior to start of construction a submittal register (ENG Form 4288). The register shall list all work plans and shop drawings required for construction.

2.2 The Contractor shall make distribution of the submittal register and submittals/workplans according to attachment number 1. The submittal process shall provide a 20-day review period (exclusive of mailing time) for all parties. All comments shall be sent to the Contractor. The Contractor shall address all comments received and tabulate comments and corresponding responses for distribution. The Contractor shall make the appropriate changes and distribute final submittals/workplans. Any disputes between reviewing parties will be resolved by the Contracting Officer. Work shall not begin on that submittal item until all comments have been satisfactorily addressed.

3. Government Personnel Protection.

3.1 The Contractor shall provide protective gear (including PPE) and clothing as required by the SSHP to protect against all job-site hazardous conditions. The Contractor shall provide all equipment and support for two (2) full-time Government Quality Assurance personnel and up to three (3) intermittent Government visitors at any one time as may be required to monitor and/or observe the Contractor's work. (Level of protection for this Delivery Order shall be mainly Level "D" and "C"; modified as required.)

4. Contractor Prepared Construction Progress Chart.

The bar chart should indicate sufficient detail to reveal how the contractor plans to meet the required completion date or dates. Details shall

include all salient features of the contract and each feature having a separate completion date must be identifiable in the chart. The following detailed instructions are for assisting the contractor in preparing initial or revised harts. The various headings and columns of the sample form have been identified by figures and parenthetical letters and the following instructions are identified accordingly (parenthetical letters will not be shown on regular chart):

Block 1. Name of contractor as shown in the contract.

Block 2. Complete contract number as shown in the contract.

Blocks 3 and 4. Name and location as shown in the contract.

Block 5. Description as shown in the contract.

Blocks 6, 7, and 8. To be signed by official representative of the contractor and by the Resident Engineer with space provided for acceptance by the Area Engineer.

Column (a). Principal Contract Features. List here the principal salient features of the contract such as building, site preparation, concrete, masonry, structural steel, roofing, interior finishing, mechanical, electrical, paving, seeding, O&M manuals, etc.

Column (b). Line Item. Show "Line Item No." to which each feature or bar graph applies as indicated on ENG Form 3013 (Work Order) which is supplied each Field office by the District Office.

Column (c). Weight. Divide the amount shown in Column (d) for each principal feature by the total (f) in Column (d).

Column (d). Estimate Cost. List the amount.

Column (e). Insert the appropriate months covering the limits of the contract, using the vertical lines as a period for each month. This scale is to be used on all charts.

Item (f). Show totals for "Wt." and Estimate Cost" columns.

Item (g). Draw in open bar graphs for "Scheduled" progress to indicate the starting and completion dates for each feature shown under Column (a). Percentages are to be indicated above the bar graph for each 30-day interval. See explanation of Construction Progress chart on page D-3.

Item (h). Show scheduled contract starting date. The starting date

is the date following the date of acknowledgment of receipt of Notice to Proceed by the contractor.

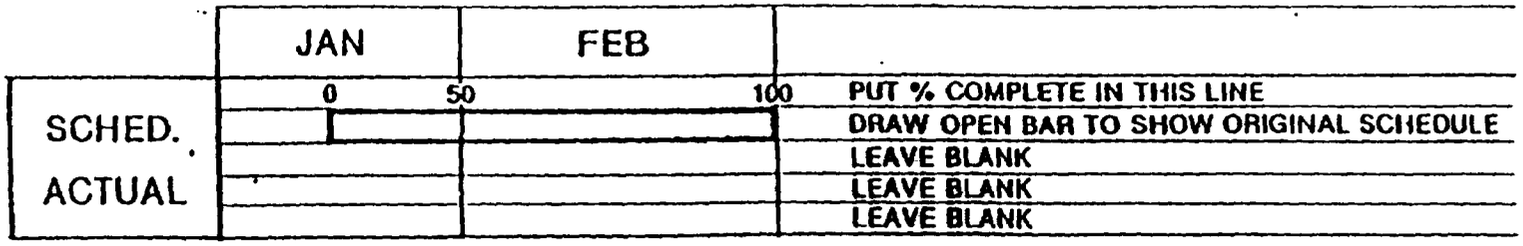
Item (i). Show scheduled completion date or dates for the various features to be completed as specified in Paragraph 1 of the Special Provision in the specifications.

Item (j). The curve for scheduled progress is shown as a solid black line whereas actual progress is shown as a broken line. The method by which each point on the curve may be as follows: For each contract feature multiply the "Wt." value shown in Column (c) by the percent shown on the bar graph for the specific date; the total of the figures thus computed for all the principal features on the same date will indicate the value to be plotted for the curve on that date.

Item (k). Chart on Page D-5 (Revised Chart). List all "Approved Modifications" by number, each one as a principal feature under Column (a). A revised chart will be submitted only when the monetary value of the approved modifications amount to approximately ten percent of the existing total contract amount, or when an executed modification changes the contract duration or extends the contract time. All approved modifications are to be listed as separate principal features, and not combined with any of the original principal features, except that minor modifications not materially affecting the scope of work may be grouped together. A brief identification of the work involved under each approved modification should be shown in parentheses following the modification number. Modifications involving time extensions only will be shown also with the number of days allowed shown in parentheses after the modification numbers.

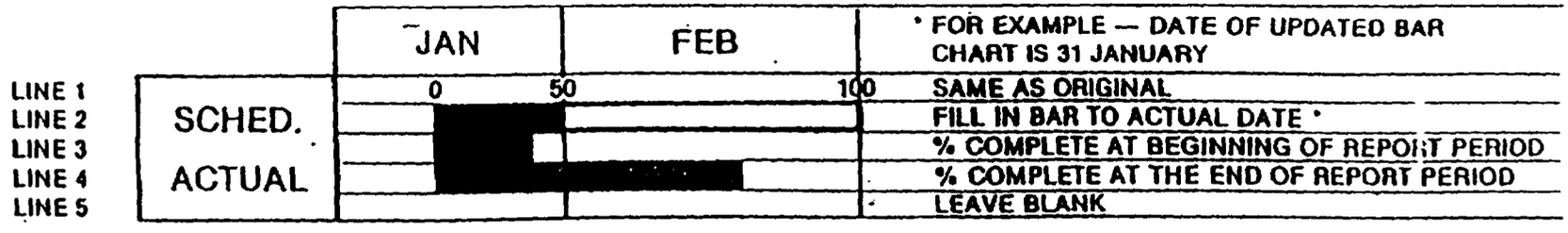
Item (l). For each reporting period the open bar graphs will be filled in as shown on chart, page D-3.

EXPLANATION OF CONSTRUCTION PROGRESS CHART



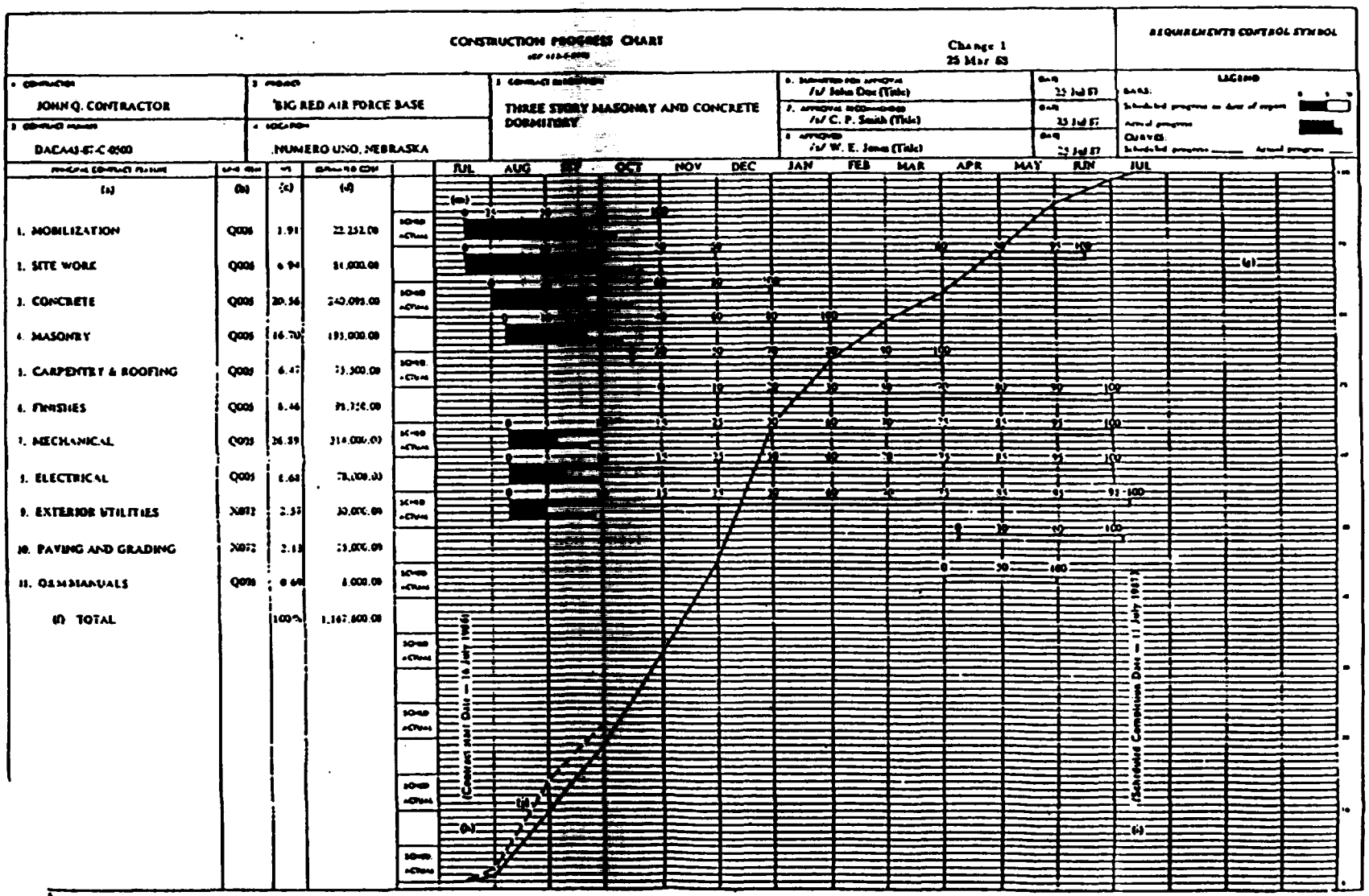
ORIGINAL BAR CHART

NOTES: PUT A % COMPLETE NUMBER AT EACH 30 DAY VERTICAL LINE DURING DURATION OF ITEM. (OR ANY APPROPRIATE LABELING OF %)



UPDATED BAR CHART

NOTES:
1. THIS EXAMPLE SHOWS A CONTRACTOR AHEAD OF SCHEDULE.
2. IF LINE 4 WAS SHORTER THAN LINE 2 THEN CONTRACTOR IS BEHIND SCHEDULE.
3. IF THIS IS FIRST UPDATE SINCE ORIGINAL LEAVE LINE 3 BLANK.


CONSTRUCTION PROGRESS CHART
Change 1
25 Mar 83
REQUIREMENTS CONTROL SYMBOL
JOHN Q. CONTRACTOR
BIG RED AIR FORCE BASE
DACA43-87-C-0500
NUMERO UNO, NEBRASKA
THREE STORY MASONRY AND CONCRETE DORMITORY
/s/ John Doe (Title)
/s/ C. P. Smith (Title)
/s/ W. E. Jones (Title)
25 Jul 87
25 Jul 87
25 Jul 87
LEGEND
(a) TOTAL
1. MOBILIZATION
2. SITE WORK
3. CONCRETE
4. MASONRY
5. CARPENTRY & ROOFING
6. FINISHES
7. MECHANICAL
8. ELECTRICAL
9. EXTERIOR UTILITIES
10. PAVING AND GRADING
11. O&M MANUALS
JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL
(Contract start Date — 16 July 1986)
(Scheduled Completion Date — 11 July 1987)
2454

CONSTRUCTION PROGRESS CHART

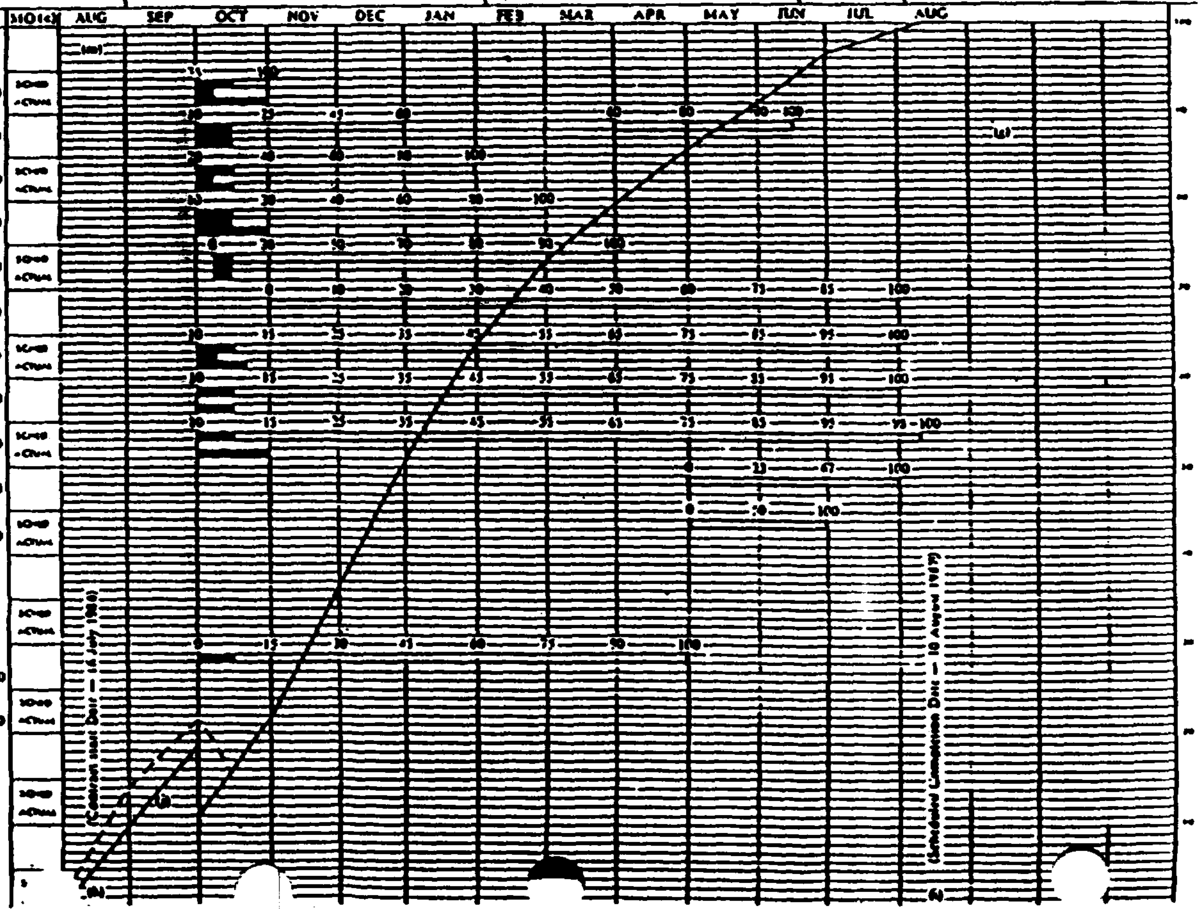
Change 1
25 Mar 88

REQUIREMENTS CONTROL SYMBOL

1. Contractor	3. Project	5. Contract Description	6. Submitted for Approval	Date
JOHN Q. CONTRACTOR	BIG RED AIR FORCE BASE	THREE STORY MASONRY AND CONCRETE DORMITORY	/s/ John Doe (Title)	3 Sep 87
2. Contract Number	4. Location		7. Approval Recommended	Date
DACA45-87-C-0500	NUMERO UNO, NEBRASKA		/s/ C. P. Smith (Title)	6 Sep 87
			8. Approved	Date
			/s/ W. E. Jones (Title)	8 Sep 87

LEGEND
BARS: Scheduled progress to date of report; Actual progress
CURVES: Scheduled progress ____ Actual progress ----

Principal Contract Feature (a)	(b)	(c)	Estimated Cost (d)
1. MOBILIZATION	Q005	1.73	22,232.00
2. SITE WORK	Q005	6.39	81,300.00
3. CONCRETE	Q005	18.62	242,095.00
4. MASONRY	Q005	13.14	155,000.00
5. CARPENTRY & ROOFING	Q005	5.56	71,500.00
6. FINISHES	Q005	7.67	98,750.00
7. MECHANICAL	Q005	24.39	314,000.00
8. ELECTRICAL	Q005	6.05	78,000.00
9. EXTERIOR UTILITIES	X032	2.33	30,000.00
10. PAVING AND GRADING	X032	1.94	25,000.00
11. O&M MANUALS	Q005	0.62	8,000.00
(A) Approved Modifications Change Order No. 1 (Revise Three Story Dormitory, 30 day time extension)		9.33	120,000.00
(f) TOTAL		100%	1,287,400.00



Submittal/Workplan Distribution

	For Comment	For Information
Corps of Engineers		
Construction Division (3) Chicago		X
Resident Office (1)	X	
US EPA, Region V (Bradley) (5)	X	X
Illinois EPA (Culnan) (2)	X	X

Notes: 1. Financial submittals shall be provided to the Resident Office for review and approval (and not solely for information).

2. Work plans shall be submitted to Construction Division for approval. Remaining submittals shall be submitted for information only.

( ) Number of copies required

APPENDIX C - RECORD OF DECISION SUMMARY

RECORD OF DECISION SUMMARY
NL INDUSTRIES/TARACORP SITE
GRANITE CITY, ILLINOIS

I. SITE BACKGROUND

The NL Industries/Taracorp Site ("the NL Site" or "the Site") is located within a heavily industrialized section of Granite City, Illinois, a community of approximately 40,000 people located across the Mississippi River from St. Louis, Missouri. Although the site is located within the Mississippi River Valley, it is not within the 100-year flood plain of any surface water. The location of the site is shown on Figure 1. Figure 2 presents the site plan, and Figure 3 shows the 100-year flood plain in the vicinity of the site.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

The NL Site is the location of a former secondary lead smelting facility. Metal refining, fabricating, and associated activities have been conducted at the site since before the turn of the century. Prior to 1903, the facilities at the site included a shot tower, machine shop, factory for the manufacture of blackbird targets, sealing wax, manufacture of mixed metals, refining of drosses, and the rolling of sheet lead. From 1903 to 1983 secondary lead smelting occurred on-site. Secondary smelting facilities included a blast furnace, a rotary furnace, several lead melting kettles, a battery breaking operation, a natural gas-fired boiler, several baghouses, cyclones and an afterburner. Secondary lead smelting operations were discontinued during 1983 and equipment dismantled.

In July of 1981, St. Louis Lead Recyclers, Inc. (SLLR) began using equipment on adjacent property owned by Trust 454 to separate components of the Taracorp waste pile. The objective was to recycle lead bearing materials to the furnaces at Taracorp and send hard rubber and plastic off-site for recycling. SLLR continued operations until March 1983 when it shut down its equipment. Residuals from the operation remain on Trust 454 property as does some equipment.

A State Implementation Plan for Granite City was published in September 1983 by the Illinois Environmental Protection Agency (IEPA). The IEPA's Report indicated that the lead nonattainment problem for air emissions in Granite City was in large part attributable to emissions associated with the operation of the secondary lead smelter operated by Taracorp and lead reclamation activities conducted by SLLR. The IEPA procured Administrative Orders by Consent with Taracorp, St. Louis Lead Recyclers Inc., Stackorp, Inc., Tri-City Truck Plaza, Inc., and Trust 454 during March 1984. The Orders required the implementation of remedial activities relative to the air quality.

NL Industries (NL), as former owner of the site, voluntarily entered into an Agreement and Administrative Order by Consent with the U.S. Environmental Protection Agency (U.S. EPA) and IEPA in May 1985 to implement a Remedial Investigation and Feasibility Study (RI/FS)

for the site and other potentially affected areas. Taracorp was not a party to the agreement due to the fact that it filed for bankruptcy. The U.S. EPA determined that the site was a CERCLA facility and it was placed on the National Priorities List on June 10, 1986.

III. COMMUNITY RELATIONS HISTORY

U.S. EPA published the Proposed Plan in accordance with CERCLA Section 117. This document and the draft Feasibility Study (FS) Report and associated FS Addendum were made available to the public on January 10, 1990, at the beginning of a 45 day public comment period. The comment period was extended an additional 15 days to March 12, 1990, due to extensive community interest and response to the proposed remedy for the site. Availability sessions were held on January 23-25, 1990, and March 5, 1990, and a public meeting was held on February 8, 1990. Approximately 240 people attended the public meeting and expressed their concerns. Comments received during the public comment period and the responses to those comments are contained in the Responsiveness Summary (Appendix A).

IV. SCOPE AND ROLE OF THE RESPONSE ACTION

NL Industries, a Potentially Responsible Party (PRP) and former site owner/operator, under the direction of U.S. EPA and IEPA, initiated a RI/FS at this site. Activities performed under the May 1985, RI/FS Administrative Order by Consent included determining the nature and extent of contamination at the site and evaluating the feasibility of various remedial alternatives to clean up the site.

This Record of Decision (ROD) addresses contaminated soil and waste materials on the site, in adjacent residential areas, and in nearby alleys, driveways and residential areas. These areas were determined to be a principal threat at the site due to the potential risk from direct contact, ingestion, and inhalation of contaminated soils, dust, and waste materials. The surface water and air exposure pathways did not present an unacceptable risk to human health and the environment, and groundwater was not contaminated immediately downgradient (200-300 feet) from the site; however, the deeper portion of the upper aquifer was not sampled. This is the first and only planned response action at the site.

V. SITE CHARACTERISTICS

The RI was conducted by NL under the direction of U.S. EPA and IEPA to determine the nature and extent of contamination at the NL Site. Field activities were conducted from December 1986 through November 1987. Field aspects of the investigation included excavating test pits in the Taracorp pile, constructing monitoring wells, collecting representative samples of waste materials, soils, surface water, sediment, groundwater, and air, and conducting aquifer tests.

DECLARATION

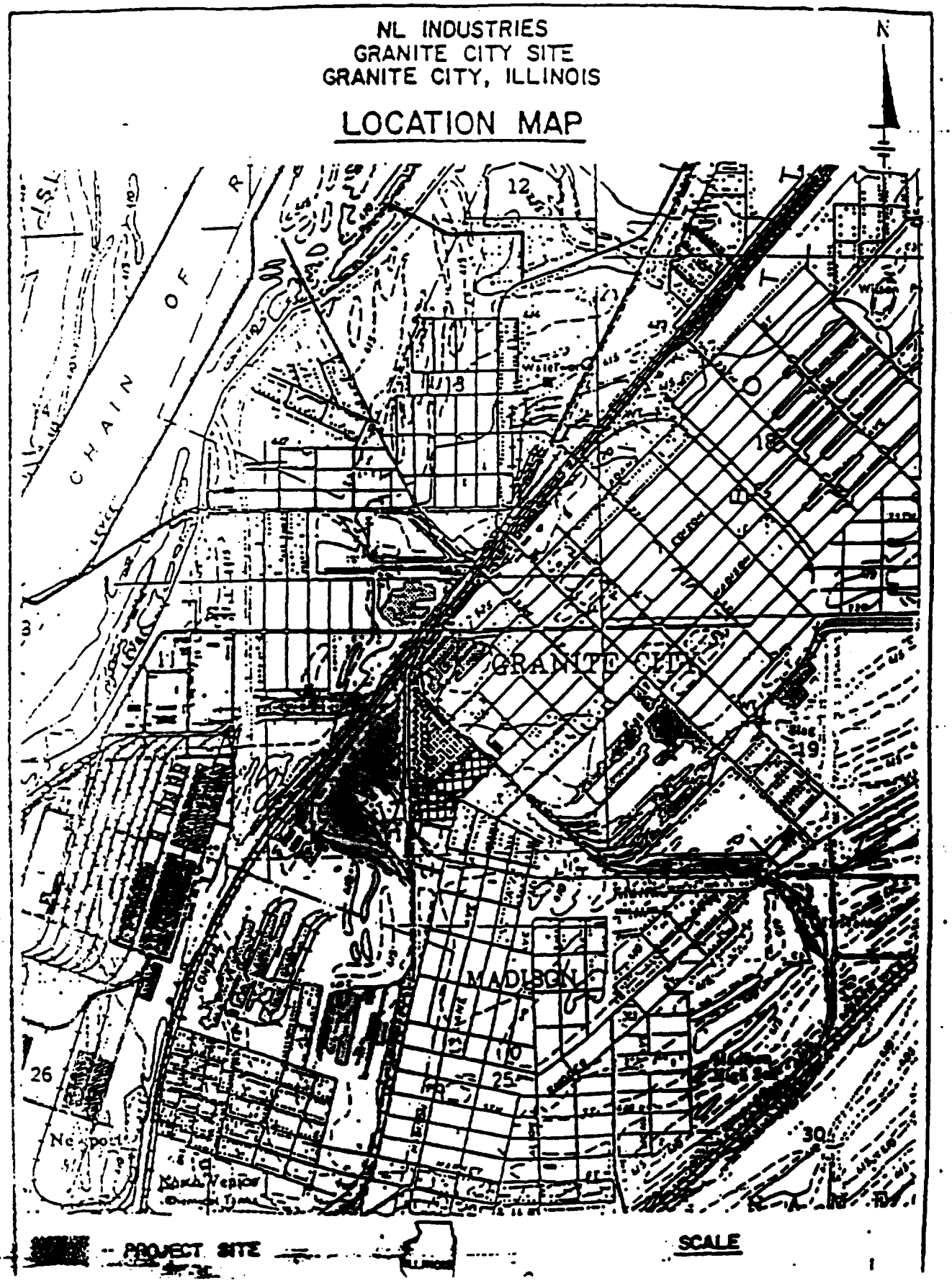
The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate, and is cost-effective. This remedy satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

However, because this remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted every five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

3/30/90
Date

for Frank M. Covington
Valdas V. Adamkus
Regional Administrator
Region V

AREA 1


NL INDUSTRIES
GRANITE CITY SITE
GRANITE CITY, ILLINOIS
LOCATION MAP
N
CHAIN OF
GRANITE CITY
MADISON
PROJECT SITE
SCALE

11.2

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

NL Industries/Taracorp
Granite City, Illinois

STATEMENT OF BASIS AND PURPOSE

This decision document represents the selected remedial action for the NL Industries/Taracorp (NL) site developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This decision is based upon the contents of the administrative record for the NL site. The attached index identifies the items which comprise the administrative record upon which the selection of a remedial action is based.

The State of Illinois has concurred on the selected remedy. The letter of concurrence is attached.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE REMEDY

This final remedy includes treatment of the principal threats posed by the site by (1) removing crushed hard rubber battery casings and lead contaminated soil from residential areas, 2) consolidating the soils, crushed casings and lead-contaminated materials from an adjacent waste pile into the existing Taracorp slag pile and 3) providing the expanded Taracorp pile with a RCRA-compliant, multimedia cap.

The major components of the selected remedy include:

- Installation of an upgraded security fence around the expanded Taracorp pile.
- Deed Restrictions and other institutional controls to ensure protection of the Taracorp pile.
- Performance of soil-lead sampling to determine which areas must be excavated and the extent of the excavation.
- Inspection of alleys and driveways and areas containing surficial battery case material in Venice, Eagle Park Acres, Granite City, Madison and any other nearby communities to determine whether additional areas not identified in the Feasibility Study must be remediated as described below.

- Performance of blood lead sampling to provide the community with current data on potential acute health effects associated with site contamination.

- Installation of a minimum of one upgradient and three downgradient deep wells, monitoring of groundwater and air, and inspection and maintenance of the cap.

- Removal and recovery of all drums on the Taracorp pile at a secondary lead smelter.

- Consolidation of waste contained in an adjacent St. Louis Lead Recyclers piles with the Taracorp pile.

- Excavation and consolidation with the Taracorp pile or off-site disposal of battery case material from all applicable alleys and driveways in Venice, Illinois, Eagle Park Acres, and any other nearby communities.

- Excavation and consolidation with the Taracorp pile of all unpaved portions of adjacent Area 1 (see Figure) with lead concentrations greater than 1000 ppm.

- Excavation and consolidation with Taracorp pile or off-site disposal of all residential soils and battery case materials around the site and in Venice, Eagle Park Acres, and any other nearby communities with lead concentrations greater than 500 ppm.

- Inspection of the interiors of homes on property to be excavated to identify possible additional sources of lead exposure and recommend appropriate actions to minimize exposure.

- Implementation of dust control measures during all remedial construction activities.

- Construction of a RCRA-compliant, multi-media cap over the expanded Taracorp pile and a clay liner under all newly-created portions of the expanded Taracorp pile.

- Development of contingency plans to provide remedial action in the event that the concentration of contaminants in groundwater or lead or PM_{10} (particulate matter greater than 10 microns) in air exceed applicable standards or established action levels, or that waste materials or soils have become releasable to the air in the future.

- Development of contingency measures to provide for sampling and removal of any soils within the zone of contamination described by the soil lead sampling to be implemented above with lead concentrations above 500 ppm which are presently capped by asphalt or other barriers but become exposed in the future due to land use changes or deterioration of the existing use.

The NL Site is located in the Southwestern portion of Madison County, Illinois within the Mississippi River Valley. The site is approximately eight to ten miles south of the confluence of the Mississippi and Missouri Rivers. The site is underlain by recent alluvium and glaciofluvial and glaciolacustrine deposits. Bedrock beneath the alluvium is Carboniferous age rocks consisting of limestone, sandstone and shale. The alluvial and glacial deposits which fill the valley range in thickness from less than one foot adjacent to the bluff boundary and the Chain of Rocks reach of the Mississippi River to greater than 170 feet near the City of Wood River. The fill thickness across the entire area averages approximately 120 feet. The estimated thickness of the valley deposits beneath the site is approximately 100 to 120 feet. Investigations conducted by the Illinois State Water Survey have revealed the valley deposits become progressively coarser with depth. Generally, groundwater in the Granite City area occurs within the unconsolidated valley deposits under unconfined and leaky confined conditions. Recharge of groundwater within the area is from precipitation and induced infiltration of surface water from the Mississippi River and smaller surface water bodies in the area.

A search of available hydrogeologic data, door-to-door surveys in areas immediately downgradient of the site, and hydrogeologic field investigations conducted during the RI indicated the following:

- residents of Granite City drink water provided by the city which is obtained from the Mississippi River.

- only one well in the downgradient vicinity of the site was in use; it was used for lawn watering.

- the water table was encountered at an average depth of 24 feet below ground surface.

- the horizontal hydraulic conductivity of the site ranged from 5.3×10^{-4} cm/sec to 2.0×10^{-2} cm/sec within the shallow portion (approximately 20 feet deep) of the aquifer and 4.3×10^{-4} cm/sec to 6.1×10^{-2} cm/sec in the "deeper" zone (approximately 35 feet deep).

- groundwater flow is in a south-southwesterly direction across the site, toward the Mississippi River.

- the linear groundwater flow velocity has been calculated as ranging from 3×10^{-3} ft/day to 0.5 ft/day in the shallow portion of the aquifer and 2×10^{-3} ft/day to 0.5 ft/day in the "deeper" zone.

- a downward verticle gradient was identified in some of the well nests at the site.

Results of the RI, which was finalized on February 1, 1989, with Addendum dated January 10, 1989, are summarized below:

Areas of contamination (Refer to Figure 4):

Taracorp Pile

Located on the site is a pile composed primarily of blast furnace slag and battery case material. The volume of the pile is approximately 85,000 cubic yards. In addition, smaller piles immediately adjacent to the Taracorp pile, which were associated with the adjacent SLLR recycling operation, comprise approximately 2450 cubic yards. Tests conducted on the materials in the Taracorp pile and small SLLR piles demonstrate lead concentrations in the range of 1-20%. EP toxicity test results demonstrate that the waste pile materials are a characteristic hazardous waste under 40 CFR Part 261. In addition, on the surface of the pile are 25-35 drums and containers holding solid wastes from the smelting operations which normally would be recycled. These containers remained after the smelting operations ceased in 1983.

Area 1 Battery Case Material and Soils

Area 1 consists of property owned by Trust 454 and Tri-City Trucking. These properties abut the NL Site and were the subject of previous regulatory action. The limits of Area 1 are shown on Figure 4.

Trust 454 property contains a pile of battery case materials (the St. Louis Lead Recyclers or SLLR pile) as well as unpaved areas. The SLLR pile contains approximately 4000 cubic yards in two general areas. The lead concentration range in this pile was 10-30%. EP toxicity analyses of the pile materials indicate that this material has characteristics similar to those of the Taracorp pile and should be managed as hazardous waste. Analyses of the unpaved area indicate a lead concentration at the surface of 9250 mg/kg.

Tri-City Trucking property includes a large unpaved area which is used to park and service trucks. Analyses of soils from areas around this property suggest that the soils contain lead concentrations in the range of 12,000 to 75,000 mg/kg.

Surface Soils

Surface soil samples were collected from 50 locations not including Taracorp or Trust 454 properties. Generally samples were collected at depths of 0-3 and 3-6 inches below grade. With the exception of one anomalous value approximately 3200 feet from the site boundary, the results indicate that the lead concentration in surface soils (0-3 inches) within 1/4 mile of the site boundary were higher (514-4150 mg/kg) than those further from the site (139-993 mg/kg). Samples collected from the surface (0-3 inches) generally contained more lead (average 1160 mg/kg) than the deeper (3-6 inch) samples which averaged 560 mg/kg. Refer to Figure 5 for the estimated areas of lead contamination above 500 ppm.

Eagle Park Acres

Eagle Park Acres includes some vacant land to which battery case material was previously hauled. The battery case material was used to fill a ditch on the property and a portion has been uncovered during subsequent excavation. The approximate volume of material and surrounding soil at Eagle Park Acres is 2700 cubic yards. Testing of the soil in this area indicated surface lead concentrations ranging from 63 mg/kg to 3280 mg/kg. Refer to Figure 6 for the estimated areas of contamination in Eagle Park Acres.

Venice Township Alleys

According to residents in the area, Venice Township hauled hard rubber case material to unpaved alleys in Venice Township. Tests conducted on these alleys resulted in a wide range of lead concentrations. Surface lead concentrations ranged from 200 mg/kg to 126,000 mg/kg. The estimated volume of battery case material and associated soil in these alleys is 670 cubic yards. Refer to Figure 7 for estimated areas of contamination in Venice.

Groundwater

Background water quality at the site is characterized by elevated concentrations of dissolved solids, sulfates, and manganese. Collectively, a shallow and adjacent deep well located on the site demonstrated elevated concentrations (as compared to background) of sulfates, dissolved solids, arsenic, cadmium, manganese, nickel, and zinc. However, data from the shallow and deep wells located hydraulically downgradient demonstrated water quality similar to that in the background monitoring well. The possibility of a strong downward hydraulic gradient was identified during the RI.

Surface Water and Air

No surface water is present at the site; runoff away from the area of the Taracorp pile is limited to the property of Tri-City Trucking, Trust 454, and Taracorp.

Results of air monitoring for lead conducted by IEPA have indicated that emissions from the site are well within the National Ambient Air Quality Standard for lead since Taracorp ceased smelting operations in 1983.

Post RI Information and Inspections

An inspection conducted with residents of Eagle Park Acres indicated that battery case material was used for fill much more extensively than indicated in the draft FS Report. Many former driveways and parking lots throughout the area contain battery case material at the surface; others have been covered with an undetermined depth of fill material. The estimated volume of contaminated material in the draft FS Report is low.

During the public comment period, many residents indicated areas in Granite City which contained battery case material as fill. These area are currently being investigated. It should be noted that Figures 5, 6 and 7 were generated based on information available at the time of the Feasibility Study, and therefore, represent only estimated areas of contamination/remediation.

VI. SUMMARY OF SITE RISKS

The Risk Assessment included in the RI Report identified two complete exposure pathways that exist at the site: direct contact with contaminated waste materials and soils, and inhalation of contaminated airborne dust. Lead was identified as the primary contaminant of concern at the site, and all remedial activities included in alternatives in the FS are based on lead contamination levels.

Based on the above information, it was determined that remedial alternatives considered should address the Taracorp pile, Area 1 battery case materials and soils, nearby residential surface soils, battery case materials at Eagle Park Acres and in Venice Township Alleys, and the potential data gap presented by the possible strong downward hydraulic gradient near the site.

U.S. EPA and IEPA did not agree with the portions of the Risk Assessment conducted by NL Industries which selected soil cleanup levels for lead. This dispute led to the drafting of an FS Addendum by U.S. EPA and IEPA which added an eighth alternative, Alternative H, to the list of alternatives to be evaluated for the site. Among other things, Alternative H utilized a 500 ppm soil lead cleanup level for residential areas around the site. Documentation for the selection of this cleanup level is included in Appendix B.

VII. DESCRIPTION OF ALTERNATIVES

The alternatives that underwent detailed analysis are briefly described below.

Alternative A - No Action

Monitoring:	Air Quality Monitoring; Ground Water Monitoring, Additional Deep Wells.
Institutional Controls:	Site Access Restrictions; Land Use Restrictions; Deed Restrictions; Sale Restrictions.

Estimated Total Remedial Costs: $475,110 Present Worth
Estimated Months to Implement: 6-12

The no action alternative (A) includes a group of activities that can be used to monitor contaminant transport. The sources considered potentially viable include air, surface soils, and groundwater. It includes institutional controls on the Taracorp property and other properties where residual concentrations do not meet Remedial Objectives. In addition, a minimum of one upgradient and three downgradient deep wells would be installed to monitor water quality in the lower portion of the aquifer; well nests or clusters would be employed wherever possible.

Alternative B

Taracorp Pile:	Multimedia Cap, Institutional Controls.
Taracorp Drums:	Off-Site Recovery at Secondary Lead Smelter.
SLLR Piles:	Excavate and Consolidate with Taracorp Pile.
Venice Alleys:	Asphalt or Sod Cover Based on Usage.
Eagle Park Acres:	Vegetated Clay Cap, Institutional Controls.
Area 1 Unpaved Surfaces:	Asphalt or Sod Cover Based on Usage.
Area 2 Unpaved Surfaces:	Asphalt or Sod Cover Based on Usage.
Area 3 Unpaved Surfaces:	Asphalt or Sod Cover Based on Usage.
Monitoring:	Air and Groundwater Monitoring, Additional Deep Wells, Contingency Plans.

Estimated Total Remedial Cost: $5,685,020 Present Worth
Estimated Months to Implement: 12-24

To implement Alternative B, drums containing lead drosses and other production by-products would be removed to an off-site secondary lead smelter for lead recovery. Wastes contained in the SLLR piles would be consolidated into the Taracorp pile; the consolidated pile would be graded and capped with a multimedia cap. Institutional controls such as site access restrictions, restrictive covenants, deed restrictions, and property transfer restrictions would also be implemented.

Eagle Park Acres would be purchased and a vegetated clay cap in compliance with ARARs would be installed over the battery case material (refer to Figure 6). Institutional controls such as site access restrictions, restrictive covenants, deed restrictions, and property transfer restrictions would also be implemented.

Venice Alleys would be covered in accordance with present usage (refer to Figure 7). Asphalt would be applied to the portions subject to vehicular or pedestrian use; the remaining areas would be covered with 3 inches of topsoil followed by sod.

Unpaved portions of Areas 1, 2, and 3 (refer to Figure 4) would be covered in accordance with present usage. Asphalt would be applied to unpaved driveways and alleys; grassed or open areas would be covered with three inches of topsoil followed by sod. Removal of existing soils would be limited to driveway subgrade preparation; therefore, surface elevations would change somewhat depending on surface treatment. Any soil excavated would be transported to the Taracorp pile for use in grading prior to cap installation.

The air and groundwater monitoring included in the no action alternative would also be implemented as part of Alternative B.

Alternative C

Alternative C in the FS Report is nearly identical to Alternative D; therefore, Alternative C has been excluded from further consideration.

Alternative D

Taracorp Pile:	Multimedia Cap, Institutional Controls.
Taracorp Drums:	Off-Site Recovery at Secondary Lead Smelter.
SLLR Piles:	Excavate and Consolidate with Taracorp Pile.
Venice Alleys:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Eagle Park Acres:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Area 1 Unpaved Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Area 2 Unpaved Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Area 3 Unpaved Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Monitoring:	Air and Groundwater Monitoring, Additional Deep Wells, Contingency Plans.

Estimated Total Remedial Cost: $6,835,450 Present Worth
Estimated Months to Implement: 12-24

To implement Alternative D, drums containing lead drosses and other production by-products would be removed to an off-site secondary lead smelter for lead recovery. Wastes contained in the SLLR piles would be consolidated into the Taracorp pile; the consolidated pile would be graded and capped with a multimedia cap. Institutional controls such as site access restrictions, restrictive covenants, deed restrictions, and property transfer restrictions would be implemented.

Battery case material would be excavated from both Venice Alleys and Eagle Park Acres and transferred to the Taracorp pile. After preliminary sampling is conducted, any portion of the case material that is EP Toxic for lead will be removed to an off-site, RCRA compliant landfill or treated prior to placement in the Taracorp pile. These areas would be restored with either asphalt or sod, in accordance with current usage.

Unpaved portions of Areas 1, 2, and 3 would be excavated to a depth of three inches and restored with either asphalt or sod, in accordance with present usage. Excavated soil would be transported to the Taracorp pile for use in grading prior to cap installation.

The air and groundwater monitoring included in the no action alternative would also be implemented as part of Alternative D.

Alternative E

Taracorp Pile:	Multimedia Cap, Supplemental Liner, Institutional Controls.
Taracorp Drums:	Off-Site Recovery at Secondary Lead Smelter.
SLLR Piles:	Excavate and Consolidate with Taracorp Pile.
Venice Alleys:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Eagle Park Acres:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Area 1 Unpaved Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Area 2 through 8 Residential Surfaces:	Excavate Soil and Consolidate with Taracorp Pile
Taracorp Pile.	Restore Surfaces.
Monitoring:	Air and Groundwater Monitoring, Additional Deep Wells, Contingency Plans.

Estimated Total Remedial Cost: $31,000,000 Present Worth
Estimated Months to Implement: 42-54

To implement Alternative E, drums containing lead drosses and other production by-products would be removed to an off-site secondary lead smelter for lead recovery. An impermeable liner would then be installed on a section of Area 1 adjacent to the Taracorp pile. All soils in Area 1 with lead concentrations greater than 1000 ppm would be excavated prior to liner installation, with the excavated soil staged with the Taracorp pile. The liner would consist of 2 feet of clay, 1 foot of sand (secondary drainage layer), a 60 mil synthetic membrane, and 1 foot of sand (primary drainage layer). A primary and secondary leachate collection system (perforated PVC piping) would also be provided. Excavated soils from Areas 1 through 8 would be placed over the primary drainage layer as a base to protect the liner from damage. Following liner construction, waste materials from the Taracorp pile, SLLR pile, Eagle Park Acres, and Venice Alleys would be excavated, transported to, and placed on the liner. These wastes would be covered and graded with soils excavated from the base of the former Taracorp pile. A multimedia cap would then be installed over the consolidated pile. All construction activities in Area 1 mentioned above would comply with any applicable flood plain construction permit

requirements. Institutional controls such as site access restrictions, restrictive covenants, deed restrictions, and property transfer restrictions would also be implemented.

As discussed above, battery case material would be excavated from both Venice Alleys and Eagle Park Acres and transferred to the newly constructed liner. These areas would be restored with either asphalt or sod, in accordance with current usage.

Residential soils in Areas 2 through 8 (see Figure 5) with lead concentrations greater than 500 ppm would be excavated and restored with either asphalt or sod, in accordance with present usage. As stated above, excavated soil would be transported to the newly constructed liner and placed directly over the primary drainage layer, to protect the synthetic membrane from damage from heavy slag and debris.

Air and groundwater monitoring included in the no action alternative would be implemented as part of Alternative E.

Alternative F

Taracorp Pile:	Multimedia Cap, Supplemental Liner Recovery of Plastic Battery Case Materials and Lead, Institutional Controls.
Taracorp Drums:	Off-Site Recovery at Secondary Lead Smelter.
SLFR Piles:	Excavate and Consolidate with Taracorp Pile.
Venice Alleys:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Eagle Park Acres:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Area 1 Unpaved Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Area 2 through 8 Residential Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Monitoring:	Air and Groundwater Monitoring, Additional Deep Wells, Contingency Plans.

Estimated Total Remedial Cost: $45,000,000 Present Worth
Estimated Months to Implement: 66-78

Alternative F is identical to Alternative E, with the exception of recycling a portion of the waste materials as described below.

Prior to transport to the newly constructed liner, waste materials in the Taracorp pile would be processed to recover plastic battery case material and smeltable lead. During the initial excavation, waste material would be visually segregated: excavations containing primarily slag would be transported directly to the adjacent liner; those containing significant amounts of plastic battery case material and smeltable lead would be transported to an on-site

segregation unit. The commercially available unit would utilize flotation as a recovery mechanism. Recovered plastic would be shipped off-site for use as a raw material. Recovered lead and lead oxide would be shipped to a secondary smelter after drying. Residuals, including slag and rubber case material, would be transported to the liner.

Alternative G

Taracorp Pile:	Recovery of Plastic Battery Case Material and Lead, Disposal of Residuals in RCRA Landfill.
Taracorp Drums:	Off-Site Recovery at a Secondary Lead Smelter.
SLR Piles:	Disposal in RCRA Landfill.
Venice Alleys:	Excavate Case Material, Disposal in RCRA Landfill. Restore Surfaces.
Eagle Park Acres:	Excavate Case Material, Disposal in RCRA Landfill. Restore Surfaces.
Area 1 Unpaved Surfaces:	Excavate and Restore. Disposal in RCRA Landfill.
Area 2 through 8 Residential Surfaces:	Excavate and Restore. Disposal in RCRA or Non-RCRA Landfill.
Monitoring:	Groundwater Monitoring, Additional Deep Wells, Contingency Plan.

Estimated Total Remedial Cost: $67,000,000 Present Worth
Estimated Months to Implement: 66-78

To implement Alternative G, drums containing lead drosses and other production by-products would be removed to an off-site secondary lead smelter for lead recovery. The remaining waste materials in the Taracorp pile would be excavated, processed to recover recyclable plastic, and disposed of in a RCRA landfill.

Processing would consist of visual segregation during initial excavations to separate non-plastic bearing wastes from wastes containing plastics. Non-plastic bearing waste would be transported directly to the RCRA landfill; those containing significant amounts of plastic battery case material and smeltable lead would be transported to an on-site segregation unit. The commercially available unit would utilize flotation as a recovery mechanism. Recovered plastic would be shipped off-site for use as a raw material. Recovered lead and lead oxide would be shipped to a secondary smelter after drying. Residuals, including slag and rubber case material, would be transported to the RCRA landfill.

Battery case material would be excavated from both Venice Alleys and Eagle Park Acres and transported directly to the RCRA landfill. It is thought that these casings are primarily rubber and, therefore, not likely suitable for recycling. If significant amounts of plastic casings were excavated, however, they would be processed in the same fashion as the Taracorp pile casings. Venice Alleys

and Eagle Park Acres surface areas would be restored with either asphalt or sod, in accordance with current usage.

Unpaved portions of Areas 1 through 8 would be excavated and restored with either asphalt or sod, in accordance with present usage. Excavated soil from Area 1 would be transported to a RCRA landfill; excavated soil from Areas 2 through 8 would be transported to a RCRA or non-RCRA landfill, based on the results of preliminary EP Toxicity tests for lead.

The groundwater monitoring included in the no action alternative would also be implemented as part of Alternative G. Long term air monitoring would not be required.

Alternative H

Taracorp Pile:	Multimedia Cap, Institutional Controls.
Taracorp Drums:	Off-Site Recovery at a Secondary Lead Smelter.
SLLR Piles:	Excavate and Consolidate with Taracorp Pile.
Venice Alleys:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Eagle Park Acres:	Excavate Case Material and Consolidate with Taracorp Pile. Restore Surfaces.
Area 1 Unpaved Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Areas 2 through 8 Residential Surfaces:	Excavate Soil and Consolidate with Taracorp Pile. Restore Surfaces.
Monitoring:	Air and Groundwater Monitoring, Additional Deep Wells, Contingency Plans.

Estimated Total Remedial Cost: $25,000,000 Present Worth
Estimated Months to Implement: 18-30 (construction)

Alternative H, which was added by U.S. EPA and IEPA in an addendum to the draft FS Report, is identical to Alternative D, with the exception that the scope of off-site soil and waste materials excavation is increased significantly as described below. NL Industries has indicated to U.S. EPA its objections to the increased scope of soil excavation in this alternative.

All soils in Area 1 with lead concentrations greater than 1000 ppm and residential soils in Areas 2 through 8 with lead concentrations greater than 500 ppm would be excavated and consolidated with the Taracorp pile. Surfaces would be restored with either asphalt or sod, in accordance with present usage.

VIII. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The nine criteria used for evaluating the remedial alternatives listed above include: overall protection of human health and the environment; compliance with ARARs; long-term effectiveness; reduction of toxicity, mobility, or

acceptance; volume; short-term effectiveness; implementability; cost; State of Illinois acceptance and communities of Granite City, Madison, and Venice, Illinois acceptance. Based on these nine criteria, the U.S. EPA and IEPA have selected Alternative H, as modified with five additional elements added due to public comments received, as the preferred alternative for remedial action at the NL site. The preferred alternative includes: Blood Lead Sampling in the Neighboring Communities/Removal and Recovery of Taracorp Drums/Consolidation of SLLR Piles Into Taracorp Pile/Excavation and Restoration Of Unpaved Portions Of Area 1 With Lead Concentration Greater than 1000 ppm and Residential Areas Around The Site and in Venice, Eagle Park Acres, and Other Nearby Communities with Lead Concentration Greater Than 500 ppm, and Consolidation of These Soils and Battery Case Materials with the Taracorp Pile or Off-Site Disposal/ Excavation, Restoration and Consolidation With Taracorp Pile or Off-Site Disposal of Battery Case Material in Alleys and Driveways in Venice, Eagle Park Acres, and Other Nearby Communities/Construction of a RCRA-Compliance Cap Over the Expanded Taracorp pile and a Clay Liner Under All Newly-Created Portion of the Expanded Taracorp Pile/Construction of a RCRA-Compliant Cap Over the Expanded Taracorp Pile/Inspection of Home Interiors/Establishment of Contingency Measures To Properly Dispose of Contaminated Soil Generated Through Changes In Land Use/Installation of Deep Monitoring Wells/Cap, Air and Groundwater Monitoring And Contingency Plans/Fencing and Institutional Controls. Refer to Figure 8 for a diagram of the RCRA-compliant, multimedia cap to be placed over the Taracorp pile, after consolidation. This section discusses the performance of the preferred alternative against the nine criteria, noting how it compares to the other options under consideration.

It must be noted that the comparisons made below are for the alternatives as discussed in the Proposed Plan. Due to comments received during the public comment period, five elements were added to Alternative H, namely blood lead sampling in the surrounding community, home interior inspections on properties to be excavated, provisions to remediate additional areas in Eagle Park Acres, Venice, Granite City, Madison and other nearby communities where battery case materials are located at or near the surface and which were not identified in the draft FS Report, construction of a clay liner under the new newly-created portions of the expanded Taracorp pile, and establishment of contingency measures to provide for proper disposal of contaminated soil due to land use changes within the zone of contamination. The selected remedy, or preferred alternative, is Alternative H as modified by the addition of these five new elements. These elements are not discussed in the analysis below since, with the exception of Alternative A and Alternative B and G, for which a liner would not be required, they would be included in each of the alternatives. Additionally, cost estimates have not been provided for these elements; however, it is expected that, excluding the contingency measures, these activities will not cost more than 15% of the cost estimates for the alternatives provided in this ROD. It is difficult to provide a cost estimate for the contingency measures; however, it is expected that the cost of these measures would be the same for each alternative which remediates residential soils. Finally, it must be noted that Figures 5, 6, and 7 represent only estimated areas of remediation and that the extensive soil sampling and inspections provided as part of the preferred alternative will result in the accurate delineation of areas of remediation during the upcoming Remedial Design phase of the Superfund process.

ANALYSIS

Overall Protection - With the exception of the no action alternative, the treatment of Areas 4 through 8 in Alternative B, and the treatment of Areas 1 through 3 in Alternative D, all of the alternatives, as amended by the addendum to the Feasibility Study, would provide adequate protection of human health and the environment. Each of the alternatives found adequately protective of human health and the environment includes a residential soil lead cleanup standard of 500 ppm and a soil lead cleanup standard of 1000 ppm in Area 1. Levels of protectiveness are based on interim guidance and site specific analysis of Granite City and the surrounding communities (see Appendix B). The preferred alternative includes the elimination of direct contact with and inhalation of soils and waste materials contaminated with lead at concentrations above levels which may present a risk to public health by: removal of Taracorp drums and off-site recovery at a secondary lead smelter; excavation, restoration, and consolidation with the Taracorp pile of the SLAR piles, soils and battery case materials with lead concentrations greater than 500 ppm in residential areas in Areas 2 through 8, and battery case material in Venice Alleys and Eagle Park Acres; excavation, restoration, and consolidation of soils and waste materials in Area 1 with lead concentrations greater than 1000 ppm; and providing a multimedia cap over the Taracorp pile and providing institutional controls. The preferred alternative also includes installation of additional deep wells, air and groundwater monitoring plans, and contingency plans to be developed and implemented in the event that site-related contaminant levels in the air or groundwater exceed applicable standards or that materials in the expanded Taracorp pile become exposed or releasable to the air in the future.

Compliance with ARARs - Alternatives B through H would meet all Applicable or Relevant and Appropriate Requirements (ARARs) of Federal and State Environmental Laws except for State of Illinois General Use Water Quality Standards (35 IAC 302.208). These standards are applicable to groundwater beneath the site and are exceeded for sulfates, total dissolved solids, iron, manganese and zinc. The standards for these parameters were developed to ensure the aesthetic quality of water and concentrations in excess of the General Use standards for these parameters would not present a health concern. Cadmium was also present above the General Use standard during three rounds of sampling but not during the most recent sampling. The groundwater monitoring and additional deep well installation included in all alternatives will verify cadmium concentrations and monitor concentrations of all other parameters of concern. Care would have to be exercised with Alternatives E, F, and G to ensure that Taracorp pile excavation activities do not create exceedances of air ARARs.

Additionally, the consolidation of excavated contaminated soils from the residential areas around the site is included in Alternatives D and H due to the fact that these areas are within a zone of continuous contamination created by the airborne deposition of lead from the smelter stack throughout its years of operation. Lead contamination is highest next to the smelter stack (on-site) and gradually decreases with increasing radial distance from the stack, and the nearest residential areas to be excavated are physically separated from the site boundary by one roadway, 16th Avenue.

Long-Term Effectiveness - Alternatives E, F, and G would provide good long-term effectiveness against direct contact with and inhalation of soils and waste materials containing lead concentrations above levels which may present a risk to public health, as well as an additional barrier against leaching of lead and other metals into the groundwater. The preferred alternative (i.e., Alternative H) would provide similar long-term effectiveness but would not provide the additional barrier (bottom clay liner) against leaching metals under the present Taracorp pile; however, the groundwater does not represent a complete risk pathway at this site. With the exception of Areas 4 through 8, for which no remediation is provided, Alternative B would eliminate the risk of human exposure in off-site areas upon completion of remediation but would not provide long-term effectiveness in these areas due to maintenance requirements and the potential for uncontrolled excavation. With the exception of Areas 4 through 8, for which no remediation is provided, Alternative D would provide good long-term effectiveness with respect to materials consolidated with the Taracorp pile; however, at Areas 1, 2, and 3, lead concentrations at 3 inches beneath the ground surface would remain at levels which may present a risk to public health. The no action alternative allows waste materials to remain in place and, thus, has poor long-term effectiveness.

Reduction of Toxicity, Mobility, or Volume - With the exception of the no action alternative, all alternatives provide a reduction of mobility of contaminants; the degree of mobility reduction provided, from least to greatest, is Alternative B, D, H, E, F, then G. The no action alternative does not provide any reduction of toxicity or volume, Alternatives B, D, H, and E provide a slight reduction of toxicity and volume by removal and recovery of Taracorp drums, and Alternatives F and G provide a slightly greater reduction of toxicity and volume by recycling some waste materials. The reduction of volume effected by Alternatives F and G has been calculated to be less than 10%, based on the quantity, nature and physical condition of recyclable materials in the Taracorp pile. A recycling effort on the Taracorp pile was conducted in the early 1980's by St. Louis Lead Recyclers. The effort was unsuccessful in that anticipated volume reductions were not achieved and the material remaining after recycling was more contaminated than that which entered the process. The nature of the materials in the Taracorp pile is not conducive to a successful recycling effort, and will potentially create a greater adverse health impact to workers and the public than would exist if the materials remain in place. Treatment/stabilization has been applied to contaminated soils at other sites, but has not been successfully applied to waste materials such as exist in the Taracorp pile. Additionally, Alternatives F and G would produce a contaminated sludge as a result of precipitation of rinse waters used for recycling.

Short-Term Effectiveness - Implementation of Alternatives A and B would produce minimal short-term impacts to the community, workers, or the environment, as contaminated material would be left in place. Implementation of Alternatives D, E, F, G, and H could generate dust in residential and commercial areas, which would require monitoring and control. Alternative D would be of shorter duration and would involve the movement of less materials than Alternative H, which would in turn involve less materials movement than Alternatives E, F, and G. Alternatives E, F, and G include significant excavation at the Taracorp pile; the generated dust could impact the

community, workers, and the environment. Control measures would be required. Alternatives F and G also include extensive manual handling of waste materials at the Taracorp pile; worker health and safety could be jeopardized through ingestion of and direct contact with lead containing materials.

The following periods of time are required to implement the remedial construction activities for each alternative:

Alternative	Time
A	6-12 Months
B, D	1-2 Years
H	Approximately 2 1/2 Years
E	3 1/2 - 4 1/2 Years
F, G	5 1/2 - 6 1/2 Years

Implementability - Alternatives A, B, D, and H would utilize standard monitoring and construction techniques which would be readily implementable. The excavation of the Taracorp pile and other soils and waste materials incorporated in Alternatives D, E, F, G, and H would require dust control measures. The segregation and recovery utilized by Alternatives F and G, however, would utilize equipment designed to handle batteries, not the slag and waste materials present at the Taracorp pile. In addition, the recovered products may not be suitable for recycling: the recovered plastic may not pass the TCLP test for lead, and the lead content of the recovered slag/dirt/lead mixture may not be high enough to be acceptable to a secondary smelter.

Cost - The costs of each alternative are presented below. It must be noted that these are estimated costs. More detailed cost estimates will be prepared during the Remedial Design phase of the project.

Alternative	Capital Cost	O&M	Present Worth
A	$143,840	$21,550	$475,110
B	$5,142,390	$35,300	$5,685,020
D	$6,292,820	$35,300	$6,835,450
E	$30,500,000	$35,300	$31,000,000
F	$44,500,000	$35,300	$45,000,000
G	$66,500,000	$5,300	$67,000,000
H	$24,500,000	$35,300	$25,000,000

State Acceptance - The State of Illinois supports the preferred alternative.

Community Acceptance - Community acceptance of the preferred alternative has been evaluated and it has been determined that the following five elements should be added to the preferred alternative: 1) blood lead sampling in the surrounding community, 2) home interior inspections on properties to be excavated, 3) provisions to remediate additional areas in Eagle Park Acres, Venice, Granite City, Madison, and other nearby communities where battery case materials are located at or near the surface and which were not identified in the draft FS Report, 4) construction of a clay liner under the newly-created portions of the expanded Taracorp pile and 5) establishment of contingency

measures to provide for proper disposal of contaminated soil due to land use changes within the zone of contamination. The Responsiveness Summary is included in Appendix A of this Record of Decision and addresses all comments received during the 60 day public comment period.

IX. THE SELECTED REMEDY

The preferred alternative (selected remedy) for cleaning up the NL Site is Alternative H, as amended by the addition of the five elements listed above: Blood Lead Sampling In the Neighboring Communities/Removal and Recovery of Taracorp Drums/Consolidation of SLLR Piles Into Taracorp Pile/Excavation and Restoration Of Unpaved Portions Of Area 1 With Lead Concentration Greater than 1000 ppm and Residential Areas Around The Site and in Venice, Eagle Park Acres, and Other Nearby Communities With Lead Concentration Greater than 500 ppm, and Consolidation of These Soils and Battery Case Materials with the Taracorp Pile/Excavation, Restoration and Consolidation With Taracorp Pile, or Off-site Disposal, of Battery Case Material in Alleys and Driveways in Eagle Park Acres, Venice, and Other Nearby Communities/Construction of a RCRA-Compliant Cap Over the Expanded Taracorp Pile and Clay Liner under all Newly-Created Portions of the Expanded Taracorp Pile/Inspection of Home Interiors/ Establishment of Contingency Measures To Properly Dispose of Contaminated Soil Generated Through Changes In Land Use/Installation of Deep Monitoring Wells/Cap, Air and Groundwater Monitoring and Contingency Plans/Fencing and Institutional Controls. Based on current information, this alternative provides the best balance of trade-offs among the alternatives with respect to U.S. EPA's nine evaluation criteria.

Soil Sampling/Inspection

Soil lead sampling shall be conducted in Area 1 and all residential portions of Areas 2-8 (Figure 5) and immediately adjacent properties to determine the depth to which each individual residential yard must be excavated to achieve a 500 ppm soil lead cleanup level and the depth to which Area 1 must be excavated to achieve a 1000 ppm cleanup level.

Inspections of alleys and driveways and areas containing surficial battery case materials in Eagle Park Acres, Venice, Granite City, Madison, and other nearby communities shall be conducted to determine which specific areas not already identified in Figures 5, 6 and 7 need remediation. EP toxicity sampling for lead shall be conducted for all identified areas, and lead sampling of all identified areas which are not alleys or driveways shall be conducted to determine the depth to which such areas must be excavated to achieve a 500 ppm cleanup level.

Blood Lead Study

A comprehensive blood lead study shall be conducted on a representative number and distribution of residents nearby the site. Results shall be provided to the community as soon as possible. The study will be coordinated with and/or conducted by the Agency for Toxic Substances and Disease Registry and/or Illinois Department of Public Health and shall be conducted during optimum exposure time (i.e. summer 1990).

Taracorp Drums

All drums on the Taracorp pile shall be removed and transported to an off-site secondary lead smelter for lead recovery.

SLLR Pile

All wastes contained in the SLLR pile shall be consolidated into the Taracorp pile.

Alleys and Driveways in Venice and Eagle Park Acres

Based upon the FS and the inspections outlined above, battery case material shall be excavated from all alleys and driveways in Venice, Eagle Park Acres, and other nearby communities in which it has come to be located at or near the surface. Sampling for EP toxicity for lead shall be conducted in all affected areas prior to removal of the case material. All excavated material which is not EP toxic for lead shall be transported to the Taracorp pile for consolidation. All excavated material which is EP toxic for lead shall be transported to an off-site RCRA-compliant landfill or treated prior to placement in the Taracorp pile. Excavated areas shall be backfilled, if necessary, and paved.

Area 1

Based on the sampling outlined in the Soil Sampling/Inspection paragraph above, all unpaved portions of Area 1, including the material which is beneath the SLLR pile, with lead concentrations greater than 1000 ppm shall be excavated and consolidated with the Taracorp pile. The surfaces shall be restored with asphalt or sod, in accordance with present usage.

Residential Areas

Based on the sampling outlined in the Soil Sampling/Inspection paragraph above, an accurate mapping of all residential areas around the site and in Eagle Park Acres, Venice, and other nearby communities with a lead concentration greater than 500 ppm shall be provided. All soils and battery case materials with lead concentrations greater than 500 ppm in the residential areas indicated on the map shall be excavated and consolidated with the Taracorp pile, with the exception of soils and battery case materials in Eagle Park Acres, Venice, and other nearby communities which are EP toxic for lead, which shall be transported to an off-site RCRA-compliant landfill or treated prior to placement in the Taracorp pile. The surfaces shall be restored in accordance with present usage. Every effort shall be made to remediate sensitive areas (school yards, playgrounds, areas with highest lead concentrations, etc) first, and no trees or structures or large vegetation shall be removed.

Home Interior Inspection

During the excavation of each residential yard, an inspection of the interior of each home shall be conducted to identify possible sources of lead exposure.

The results and recommendations of each inspection shall be provided to the appropriate residents.

Dust Control Measures

During all excavation, transportation, and consolidation activities conducted as part of the remedy, dust control measures shall be implemented as necessary to prevent the generation of visible emissions during these activities.

RCRA-Compliant Multimedia Cap

After all materials have been transported to and consolidated with the Taracorp pile, the consolidated pile shall be graded and capped with a RCRA-compliant, multimedia cap. The cap shall be constructed as indicated in Figure 8 and shall meet or exceed the requirements of RCRA Subtitle C, and Illinois State law. The proposed construction does not lie within any floodway in the area.

Bottom Liner

With the exception of the existing Taracorp pile, a clay bottom liner shall be constructed on all areas upon which consolidated materials are to be placed as part of this remedy. Portions of this liner on Area 1 shall be constructed after Area 1 has been excavated to a 1000 ppm lead cleanup level.

Institutional Controls/Fencing

Institutional controls, such as site access restrictions, restrictive covenants, deed restrictions, and property transfer restrictions, shall be implemented for the properties which contain the expanded Taracorp pile to prohibit future development of the site and any activities that would in any way reduce the effectiveness of the cap in achieving remedial action goals.

The facility shall be fenced in a manner sufficient to prevent access to the expanded Taracorp pile. Warning signs shall be posed at 200-foot intervals along the fence advising that the area is hazardous due to chemicals in the waste materials and soils beneath the cap which may pose a risk to public health.

Groundwater Monitoring

A minimum of one upgradient and three downgradient deep wells shall be installed to monitor water quality in the lower portion of the upper aquifer. Monitoring of these wells and the 14 existing site wells shall be conducted semi-annually for a minimum of 30 years and analyses shall be performed for the full scan Hazardous Substance List organics and inorganics. After four sampling events, consideration shall be given to deleting parameters from the list which are below detection limits for all four events.

Air Monitoring

Air monitoring for lead and PM_{10} (particulate matter less than 10 microns) shall be performed annually at a minimum of two locations adjacent to the site for a minimum of 30 years.

Cap Monitoring

For a minimum of 30 years, annual inspections of the cap shall be conducted to identify areas requiring repair. Appropriate maintenance shall be conducted immediately following the inspections.

Contingency Plans

Contingency Plans for air, groundwater and the cap/soil cover shall be developed to provide remedial action in the event that concentrations of contaminants in groundwater or lead or PM_{10} in air exceed applicable standards or established action levels or that waste materials have migrated to the surface or become releasable to the air in the future.

Other Contingency Measures

Contingency measures shall be established to provide for sampling and removal of any soils located within the zone of contamination established pursuant to the Soils Sampling/Inspection paragraph above with lead concentrations above 500 ppm which are presently capped by asphalt or other barriers but become exposed in the future due to land use changes or deterioration of the existing use.

X. STATUTORY DETERMINATIONS

Based on the information available at this time, U.S. EPA and IEPA believe this alternative will satisfy statutory requirements to: protect human health and the environment, attain ARARs, be cost-effective, utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

Protectiveness

The selected remedy will be adequately protective of human health and the environment. Removal of soils and battery case materials in residential areas above 500 ppm lead, soils and waste materials in Area 1 above 1000 ppm, and battery case materials in alleys and driveways, and restoration through applications of sod, paving, etc. will eliminate direct contact with and inhalation of dust and lead contaminated soils and waste materials which may create a risk to human health and the environment. Inspection of the interiors of homes and providing residents with recommendations to minimize exposure to potential indoor contamination will add an additional measure of reduction of direct contact and inhalation of dust and contaminated soils. Consolidation of the SCLR pile and soils and waste materials removed from the excavations described above with the Taracorp pile and capping of the resulting, expanded Taracorp pile, or off-site disposal of the above mentioned soils and waste materials, will bring all contaminated materials to a central location and provide a barrier against direct contact and dust generation from the waste materials. The cap, along with the bottom liner to be constructed under all newly-created portions of the expanded Taracorp pile, will also provide a barrier against leaching of contaminants from the expanded Taracorp pile. Transporting EP toxic soils and battery case material from Venice, Eagle Park

Acres, and other nearby communities to a RCRA-compliant landfill or treating these soils prior to placement in the Taracorp pile will also provide proper management of these materials to provide a barrier against direct contact and dust generation and leaching of contaminants into the groundwater. Additional measures to prevent exposure to contaminated waste materials and soil included in the selected remedy are: site fencing and institutional controls; groundwater, air, and cap monitoring and associated contingency plans; and establishment of contingency measures to provide for appropriate disposal of soils within the zone of contamination with lead concentrations above 500 ppm. Removal of drums on the Taracorp pile will allow these waste materials to be recycled in a secondary lead smelter. Finally, a blood lead study will provide current, useful information to residents in the vicinity of the site with respect to any acute health effects that may be present due to exposure to the contaminated soils and waste materials at and around the site.

Attainment of Applicable or Relevant and Appropriate Requirements

The Superfund Amendments and Reauthorization Act (SARA) requires that remedial actions meet legally applicable or relevant and appropriate requirements of other environmental laws. These laws may include: the Toxic Substances Control Act, the Safe Drinking Water Act, the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), and any state law which has stricter requirements than the corresponding federal law.

A "legally applicable" requirement is one which would legally apply to the response action if that action were not taken pursuant to Section 104 or Section 106 of CERCLA. A "relevant and appropriate" requirement is one that, while not "applicable", is designed to apply to problems sufficiently similar that its application is appropriate.

In addition to ARARs, many Federal and state environmental and public health programs also develop criteria, policies, guidance, and proposed standards that are not legally applicable, but that may provide useful information or recommended procedures (referred to as "To Be Considered" criteria (TBC)). These guidance or policy documents may be considered and used as appropriate, where necessary to ensure protectiveness. If no ARARs address a particular situation, TBC policies, criteria or guidelines should be used to set cleanup targets.

ARARs and TBC criteria have been identified for the NL Site. Discussed below are the primary ARARs and TBC criteria and how the selected remedy complies with them.

- RCRA Subtitle C Cap

The State of Illinois has jurisdiction for RCRA Subtitle C, hazardous waste landfill operation and closure laws. This is covered by 35 IAC Part 724, standards for owners and operators of Hazardous Waste Treatment, Storage and Disposal Facilities. This regulation applies to owners or operators of waste piles that are closed with wastes left in place. The regulation seeks to minimize infiltration by specifying clay type and to promote drainage by

specifying sloping and topsoil requirements. Closure of the expanded Taracorp pile shall be conducted in accordance with 35 IAC Part 724, subpart N; Landfills. These requirements are ARARs for the capping of the expanded Taracorp pile.

· Lead, PM_{10}, and Fugitive Dust Emissions During and After Construction and Post-Construction Monitoring/Contingency Plan

The State of Illinois has jurisdiction for Ambient Air Quality Standards and Measurement Methods for Lead and PM_{10} and requirements for fugitive particulate matter. This is covered by 35 IAC Part 212, Subpart B for lead and PM_{10} and 35 IAC Part 212, subpart K for fugitive particulate matter. Construction activities and post-construction monitoring shall be conducted in a manner that will achieve compliance with these requirements, which are ARARs for these activities.

· Groundwater Contingency Plan Action Levels

The State Of Illinois General Use Water Quality Standards which are covered by 35 IAC Part 302, Subpart B, also apply to the groundwater at the NL site. Action levels for the Groundwater Contingency Plan shall be adopted from the Maximum Contaminant Levels (MCLs) and the General Use Water Quality Standards. Groundwater contingency plans will be triggered if concentrations of contaminants in the groundwater exceed action levels at the points of compliance.

· Soil Lead Cleanup Level

Due to the fact that there is no promulgated soil lead cleanup standard and that a complete quantitative risk assessment cannot be performed at this time (see Appendix B for detailed explanation), the September 7, 1989 "Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites" is a TBC criteria for this site. This guidance basically recommends a residential soil total lead cleanup level at 500 to 1000 ppm. The selected remedy, which utilizes a 500 ppm residential soil cleanup level, complies with this guidance.

Cost Effectiveness

The selected remedy is implementable and provides the elimination of direct contact with and inhalation of soils and waste materials contaminated with lead at concentrations above levels which may present a risk to public health in a comparable or smaller time frame and cost than other alternatives which achieve this goal.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable, in that it would remove contaminated soils and waste materials from areas where maximum human exposure would occur and provide recycling of the Taracorp drums. Due to the nature of contaminated waste materials in the Taracorp pile and SLLR piles, the

relatively low concentrations of lead in the contaminated soils, and the lack of downgradient groundwater contamination at the site, this remedy represents the maximum extent to which permanent solutions and treatment can be practicably utilized.

Preference for Treatment as a Principle Element

The selected remedy satisfies the statutory preference for remedies that employ treatment that achieves substantial risk reduction through recycling of the Taracorp drums and by providing safe management of waste materials and soils that will be consolidated and remain at the site.

No treatment is provided for the Taracorp pile and SLLR piles because, although treatment has been provided for lead contaminated soils and certain lead waste materials at other Superfund sites, the quantity, nature, and physical condition of waste materials in the Taracorp pile create a situation where very little volume reduction can be achieved, stabilization is not feasible, and treatment will create a significant potential risk to workers and the community during implementation but will not achieve an appreciable volume reduction or reduction in mobility. The soils and battery case materials from residential areas and alleys and driveways to be consolidated with the Taracorp pile will not be EP toxic for lead. This, in conjunction with the fact that no downgradient groundwater contamination has been detected at the site, make treatment of these materials unnecessary and impractical. Soils and battery case materials which are EP toxic for lead will be treated prior to consolidation with the Taracorp pile or will be disposed off-site. However, because this remedy will result in hazardous substances remaining on-site above health-based levels (the expanded Taracorp pile), a review will be conducted every five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. The monitoring and contingency plans provided in the remedy will help to achieve this goal.

FIGURE 1

NL INDUSTRIES
GRANITE CITY SITE
GRANITE CITY, ILLINOIS

LOCATION MAP

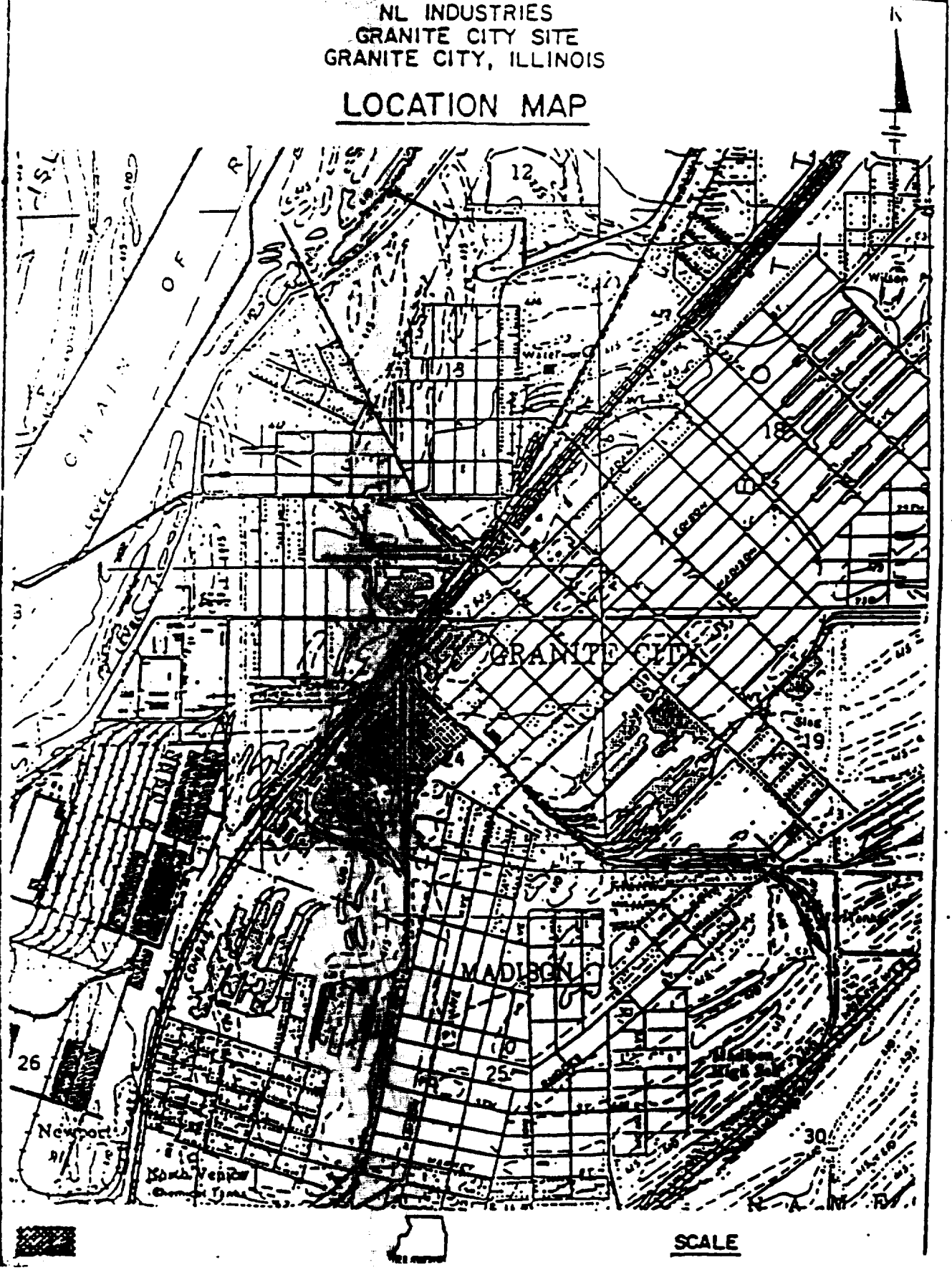


Figure 3

NL INDUSTRIES
GRANITE CITY SITE
GRANITE CITY, ILLINOIS
Flood Plain in the
Vicinity of the Site

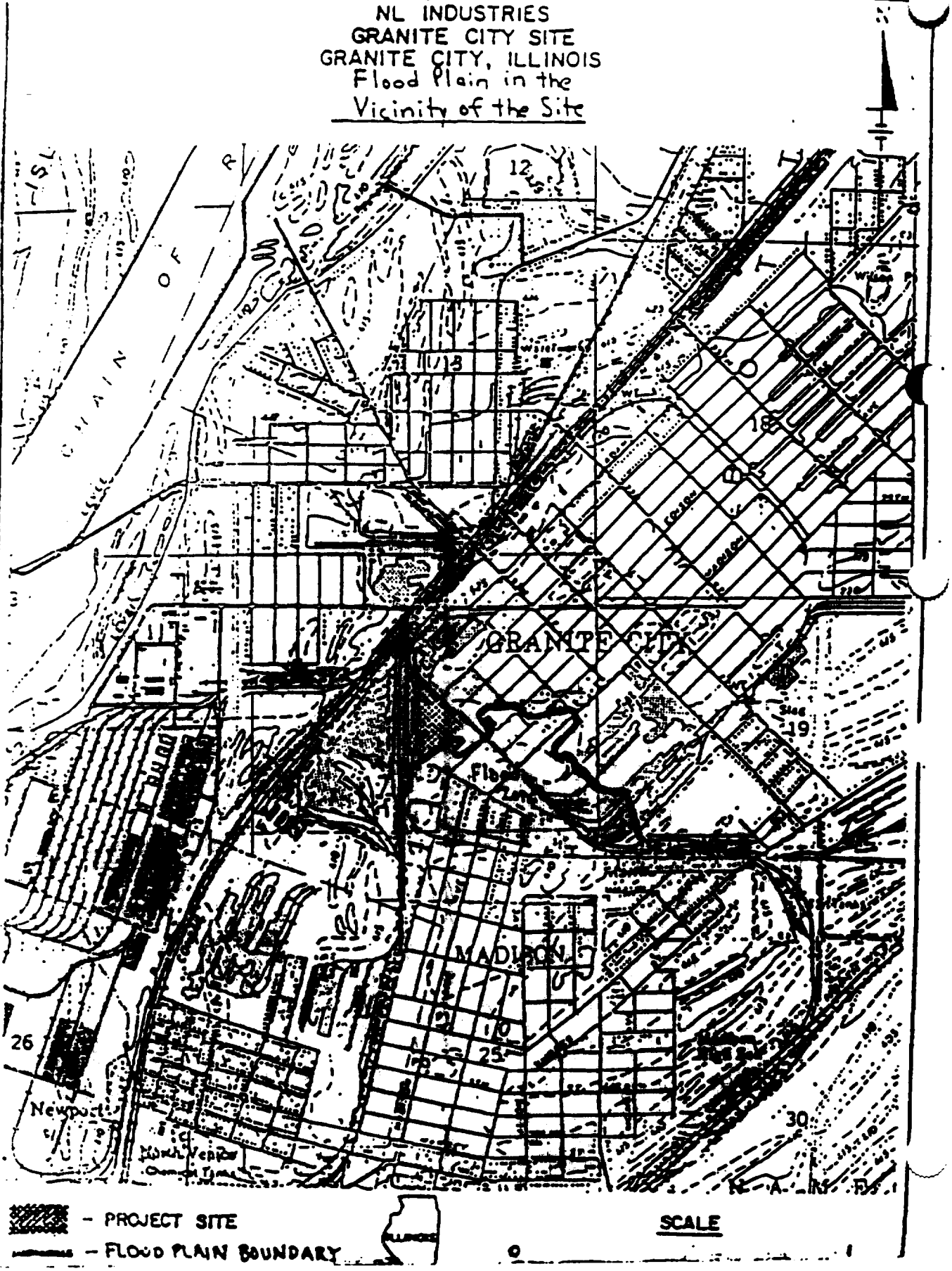


Figure 4

GRANITE CITY SITE
GRANITE CITY, ILLINOIS

Areas 1, 2, and 3

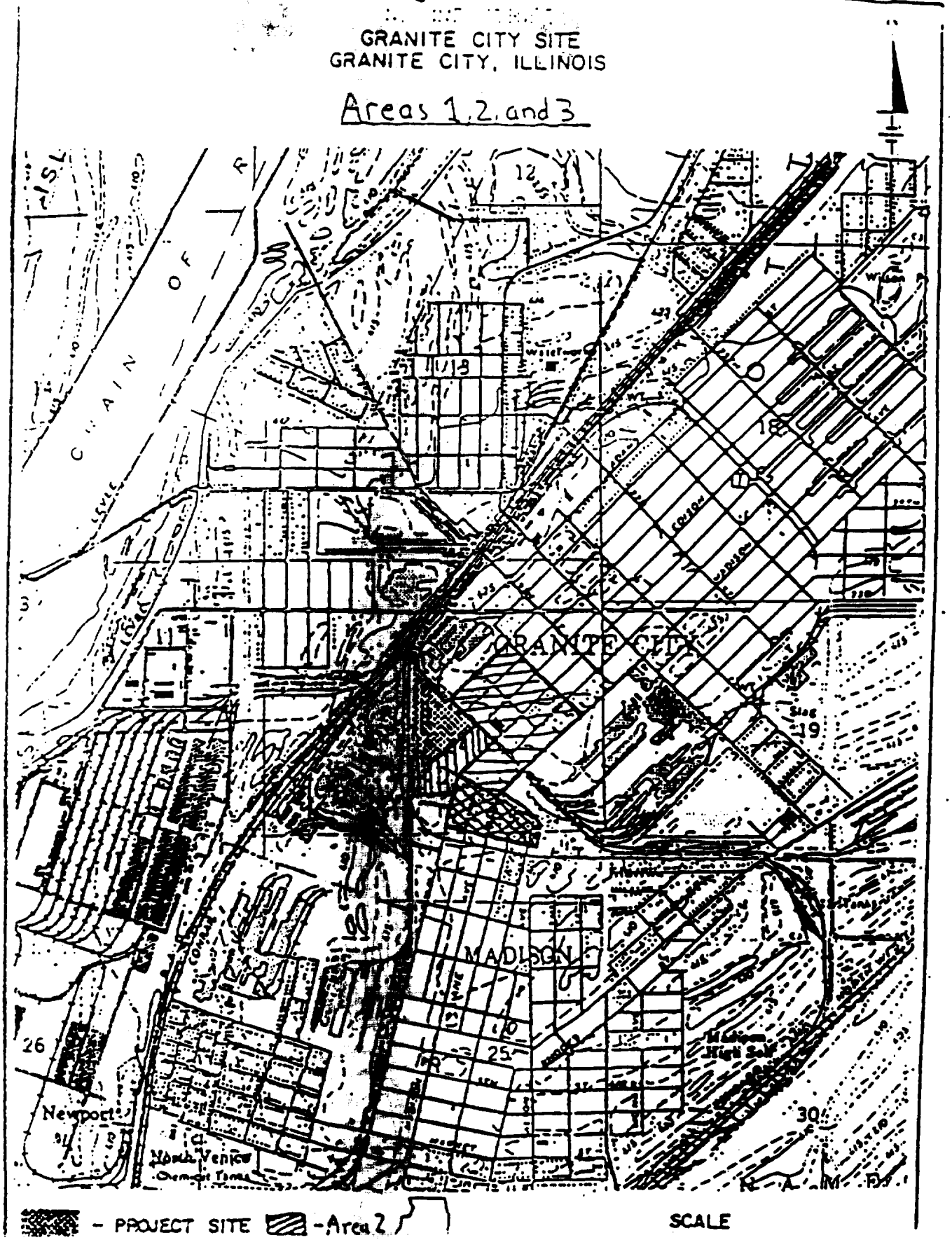
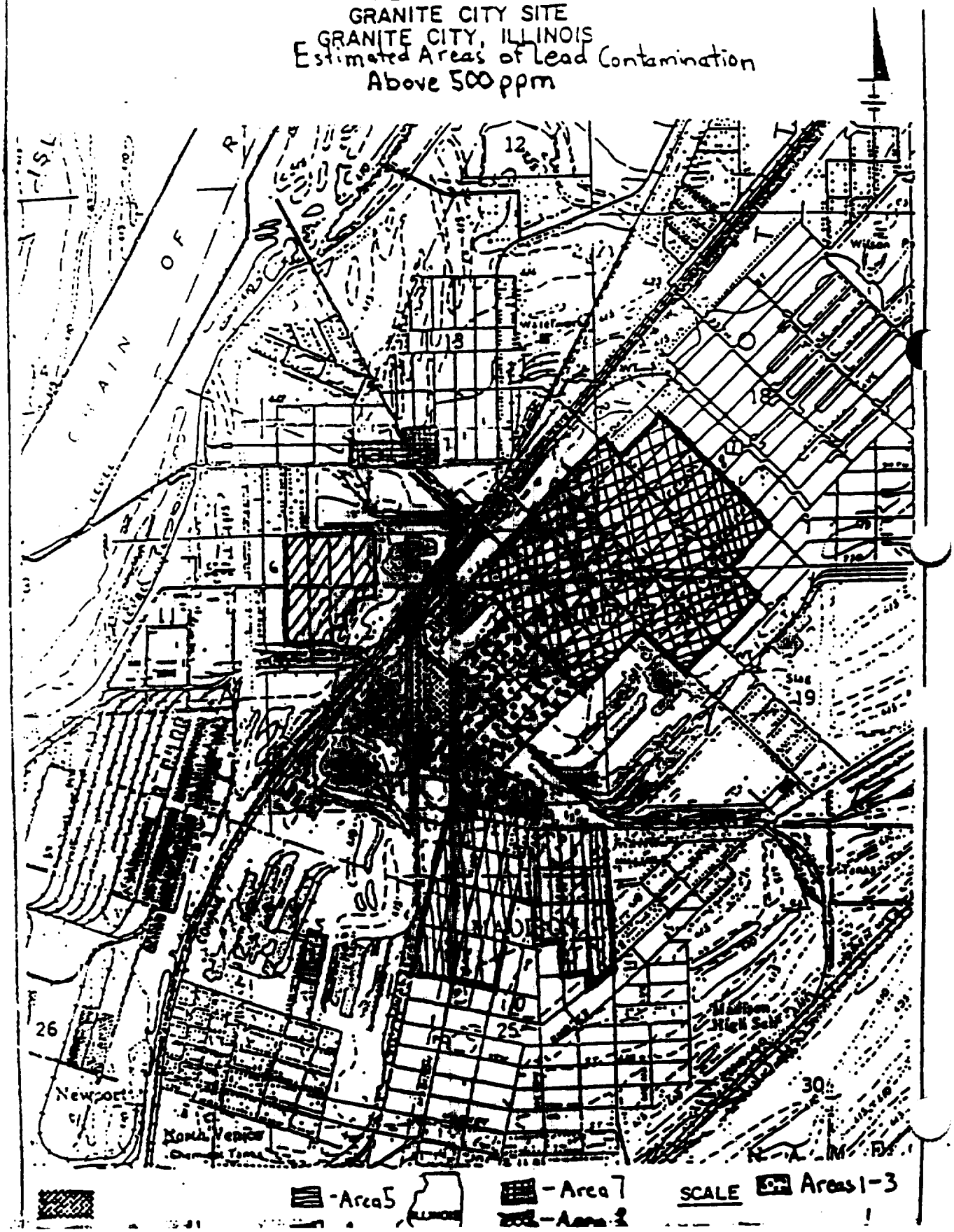


Figure 5

NL INDUSTRIES
GRANITE CITY SITE
GRANITE CITY, ILLINOIS
Estimated Areas of Lead Contamination
Above 500 ppm



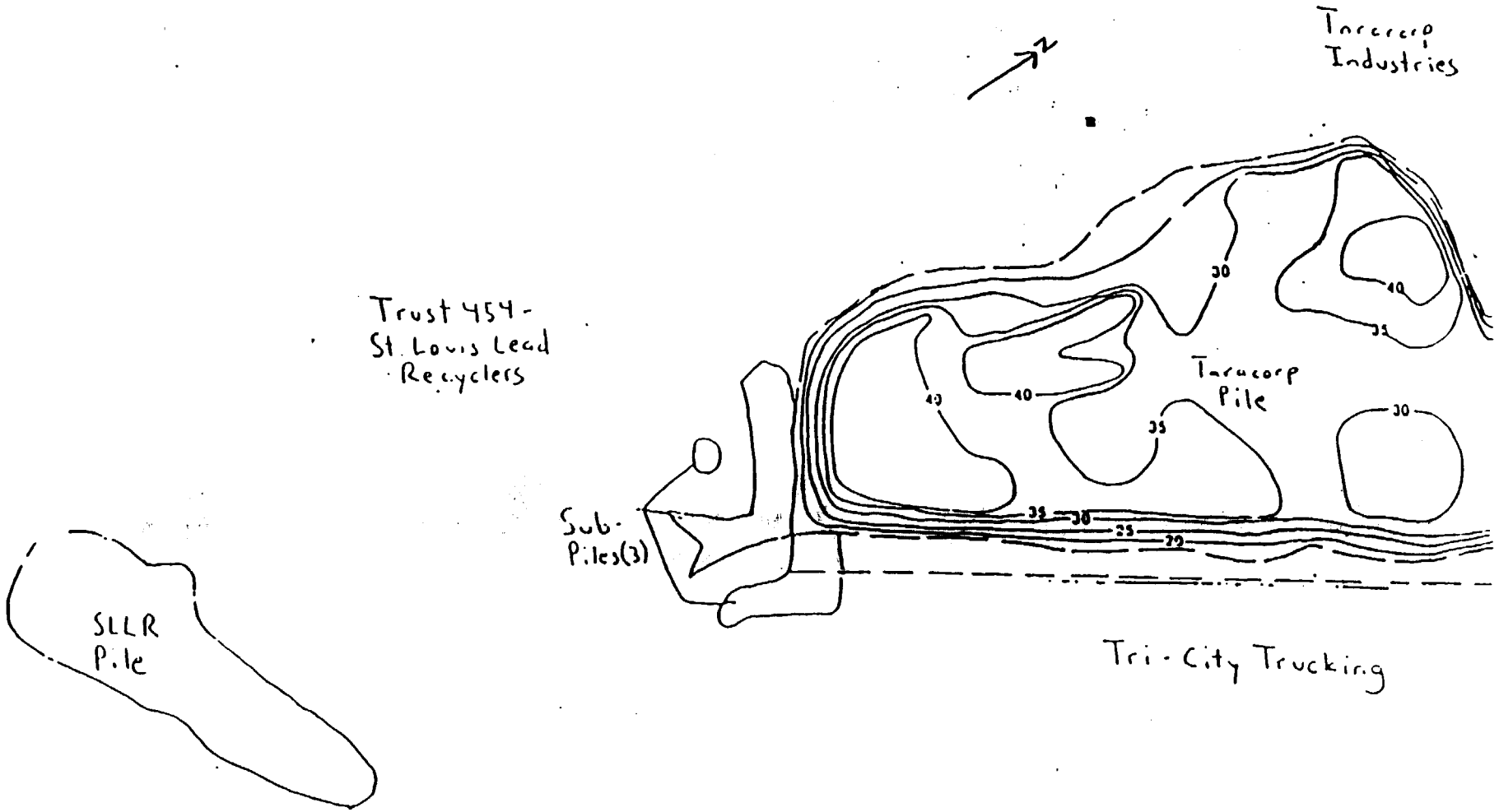
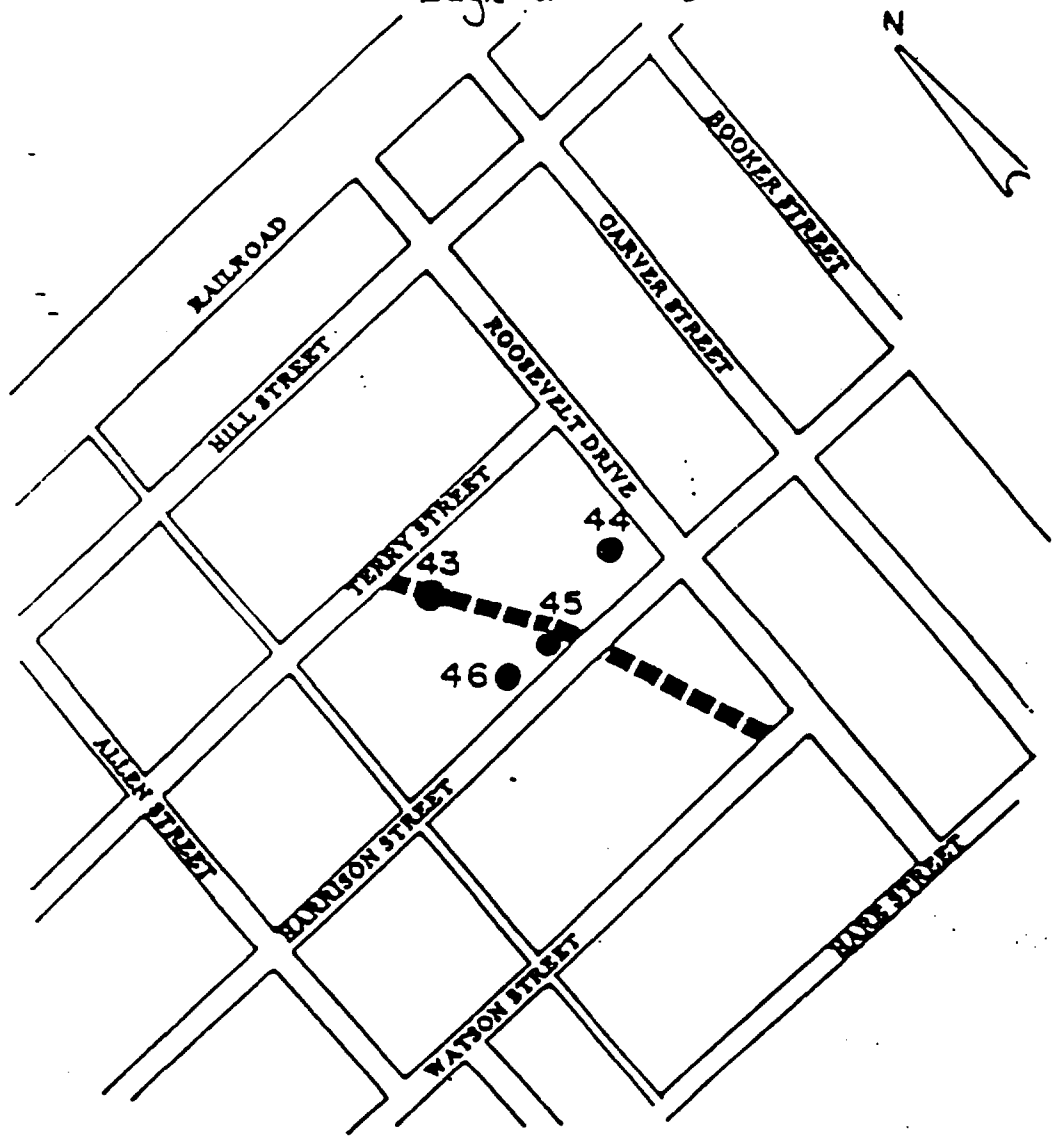

Taracorp Industries
N
Trust 454 - St. Louis Lead Recyclers
30
40
35
40
40
Taracorp Pile
35
30
Sub-Piles(3)
35
30
25
20
SLLR Pile
Tri-City Trucking

Figure 6
Estimated Areas of Contamination
Eagle Park Acres



REMOTE FILL AREA

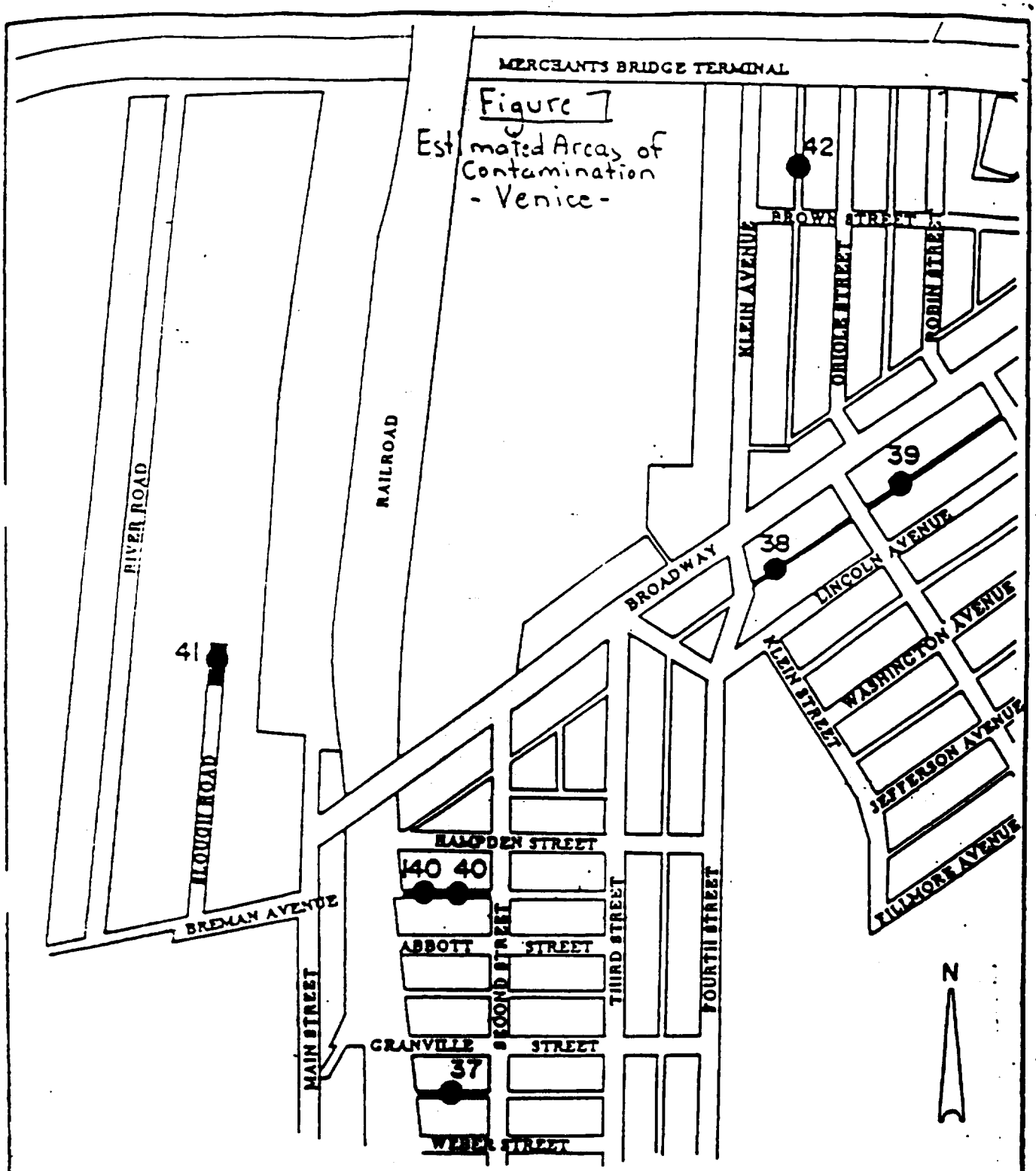
EAGLE PARK ACRES

LEGEND

● SOIL SAMPLE LOCATION

■■■ APPROXIMATE LOCATION OF DITCH

SCALE



REMOTE FILL AREA

VENICE

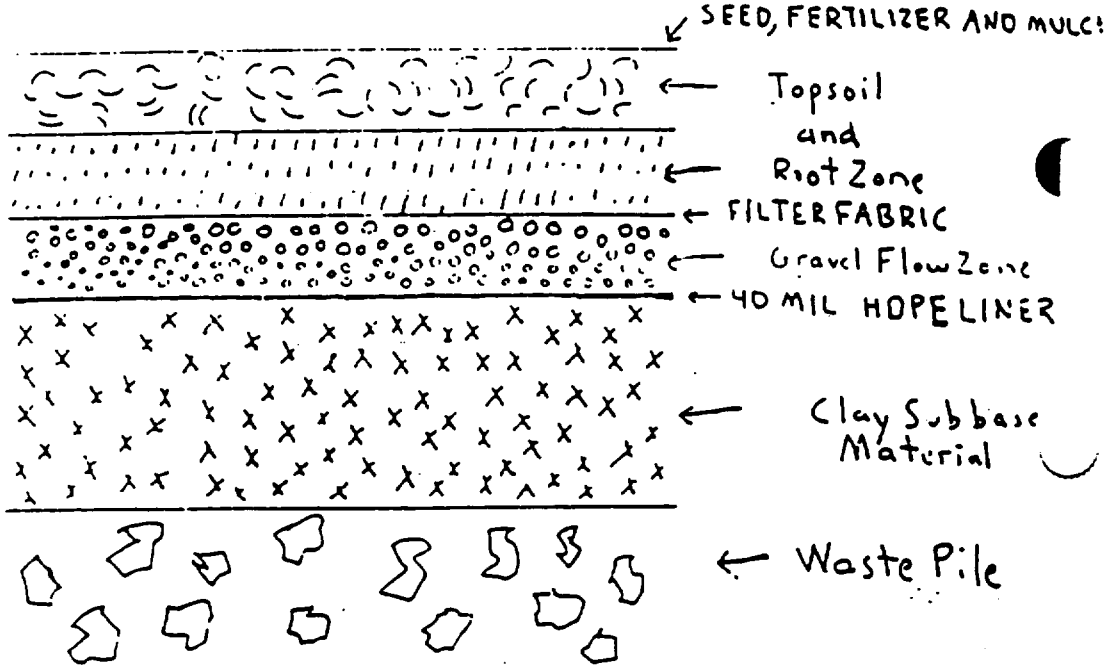
LEGEND

● SOIL SAMPLE LOCATION

PROPOSED REMEDIATION SITES

SCALE

Figure 8
Multimedia Cap Detail



APPENDIX E - WAGE RATES

CEMRO-OC (CEMRO-ED-ER/) 1st End Bluml/4065
SUBJECT: Request for Service/Construction Rates 12-15-93

FOR CEMRO-ED-ER (A. Kam)

1. Attached are the applicable Davis-Bacon construction rates for this delivery order. These rates particularly apply to any excavation, grading, temporary or permanent fencing, relocation and/or construction, alteration or repair of temporary or permanent roads or structures, i.e. concrete pads, and reseeding or resodding. These rates also apply to clearing, demolition or dismantling work if such work is to be followed by the construction of a public building or public work at the same location. The above types of work are not all-inclusive as to when Davis-Bacon rates apply. It should also be noted that the monetary threshold for application of Davis-Bacon is $2,000.

2. Also attached are the minority and female percentages, along with the covered economic area for this project.

3. In the past, contracts have been awarded with outdated wage rates causing us to incorporate the current rates by modification to the contract. We incur additional administrative costs and we do not realize the full benefit of the competitive bidding system when the current rates are added after contract award. Since the time factor varies between the date of request for rates and the date of award of delivery order or contract, your office should make request for any modifications or updates to wage decisions one week prior to award to ensure that the most current wage decision is incorporated into the contract.

4. If you have any questions, please contact Cindy Bluml at ext. 4065.

Atchs

GARY M. HENNINGSEN
District Counsel

CEMRO-ED-ER (200-1c) 8 Dec 93

MEMORANDUM FOR CEMRO-OC

SUBJECT: Request for Construction Act Rates

1. The Omaha District has accepted a Preplaced Remedial Action project at Granite City, Madison County, Illinois, east of St. Louis, Missouri, upon termination of the Rapid Response work. Request that Office of Counsel determine appropriate Construction Act Rates for this work. Project details are as follows:

a. Scope of Work: This project requires the excavation and removal of lead-contaminated soil from stack emissions. This Delivery Order also includes disposal of solid wastes at a certified disposal facility.

b. Labor Categories:

(1) Laborer

(2) Operators: Loader

(3) Truck Driver

(4) Sampling Specialist

(5) Health and Safety Specialist

2. Questions regarding this request should be addressed to the Rapid Response Technical Manager, Alvin Kam, at 221-7758.

S. L. CARLOCK
Chief, Environmental Branch
Engineering Division

TO: Al Kam #_____ LOC: Granite City, IL

Goals for minority participation for each trade	Goals for female participation in each trade
14.7	6.9

Covered Area: St. Louis, MO, SMSA- 7040, Madison Co., IL, a part

General Decision Number IL940017

Superseded General Decision No. IL930017

State: Illinois

Construction Type:
HEAVY
HIGHWAY

County(ies):

BOND	JERSEY	MONTGOMERY
CALHOUN	MACOUPIN	ST CLAIR
CLINTON	MADISON	WASHINGTON
GREENE	MONROE	

HEAVY CONSTRUCTION PROJECTS (including Sewer & Water Line Construction & Drainage Projects) & HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest areas projects, and railroad construction; bascule, suspension & spandrel arch bridges; bridges designed for commercial navigation; bridges involving marine construction, other marine bridges)

Modification Number	Publication Date
0	02/11/1994
1	04/29/1994
2	06/03/1994

COUNTY(ies):

BOND	JERSEY	MONTGOMERY
CALHOUN	MACOUPIN	ST CLAIR
CLINTON	MADISON	WASHINGTON
GREENE	MONROE	

CARP0016A 05/01/1993

	Rates	Fringes
MACOUPIN (N 1/3) & MONTGOMERY (N 1/3, INCLUDING WAGGONER, STANDARD CITY, & NORTH THEREOF) COUNTIES		
CARPENTERS	18.53	5.38
PILEDRIVERS	19.03	5.38

CARP0295A 05/01/1993

	Rates	Fringes
GREENE COUNTY (South of Apple Creek)		
CARPENTERS, LATHERS, and SOFT FLOOR LAYERS	18.17	5.74
MILLWRIGHTS	19.78	4.59
PILEDRIVERS	18.67	5.74
MACOUPIN (Southern 2/3) & MONTGOMERY (Except Waggoner, Standard City, & North thereof) COUNTIES		
CARPENTERS, LATHERS, and SOFT FLOOR LAYERS	18.62	5.29
MILLWRIGHTS	19.78	4.59
PILEDRIVERS	19.12	5.29

CARP0295E 08/01/1993

	Rates	Fringes
MADISON COUNTY		
CARPENTERS & PILEDRIVERS	19.66	5.34

CARP0500A 08/01/1993

	Rates	Fringes
CLINTON, MONROE, & WASHINGTON COUNTIES:		
CARPENTERS & PILEDRIVERMEN	19.66	5.34

CARP0500C 08/01/1993

	Rates	Fringes
ST. CLAIR COUNTY		

CARPENTERS & PILEDRIVERMEN	19.66	5.34

CARP0640A 04/01/1993

	Rates	Fringes
ALEXANDER, FRANKLIN, HARDIN, MASSAC, JACKSON, PERRY, POPE, JOHNSON, GALLATIN, PULASKI, SALINE, UNION, & WILLIAMSON COUNTIES		
CARPENTERS, MILLWRIGHTS, PILEDRIVERS & SOFT FLOOR LAYERS	17.28	5.02
DIVERS (Receive 1 1/2 times Carpenter's rate plus fringe benefits and $25.00 per day for equipment)		

CARP0904E 05/01/1993

	Rates	Fringes
GREENE (EXCEPT S. OF APPLE CREEK) COUNTY		
CARPENTERS	17.97	5.74
PILEDRIVERS	18.47	5.74

ELEC0193C 01/01/1993

	Rates	Fringes
MACOUPIN (ATHENVILLE, SCOTTVILLE, GIRARD AND AREA N. THEREOF), & MONTGOMERY (NW PART INCLUDING BOIS D ARC, HARVEL & PITMAN TWPS.) COUNTIES		
WIREMAN	20.57	3.90+3.6%
CABLE SPLICER	20.57	3.90+3.6%
BOND (E 1/2), CLINTON (HUEY, HOFFMAN & VIC.), & WASHINGTON (EXCEPT VENEDY TWP.) COUNTIES		
ELECTRICIANS	18.61	3.46
CALHOUN, GREENE, JERSEY, MACOUPIN (BRIGHTON TWP.), & MADISON (ALTON & VIC.) COUNTIES		
ELECTRICIANS	20.75	4.06+3.3%
MONTGOMERY (E. OF BUTLER GROVE, GRISHAM, HILLSBORO & RAYMOND TWPS) COUNTIES		
ELECTRICIANS	17.85	2.14

* ELEC0309B 11/29/1993

	Rates	Fringes
BOND (W 1/2), CLINTON, GREENE (ALL WORK PERFORMED ON THE ILLINOIS POWER COMPANY PROPERTY),JERSEY (ALL WORK PERFORMED ON THE ILLINOIS POWER COMPANY PROPERTY),MACOUPIN (EXCEPT N 1/3 & SW CORNER), MADISON (EXCEPT E. ALTON, ALTON, WOOD RIVER & HARTFORD), MONROE, MONTGOMERY (E. OF ROUNDTREE, IRVING & E. FORK TWP.), RANDOLPH (THAT PORTION OF RED BUD TOWNSHIP),ST. CLAIR, & WASHINGTON (OKAWVILLE & VENEDY TWPS.) COUNTIES		
LINEMEN	25.74	25 1/4%
GROUNDMEN EQUIPMENT OPERATORS	22.39	25 1/4%
GROUNDMEN TRUCK DRIVER	18.27	25 1/4%
GROUNDMAN	16.72	25 1/4%

ELEC0309C 09/01/1993

	Rates	Fringes
BOND (W 1/2), CLINTON (EXCLUDES HUEY, HOFFMAN, & VIC.), MACOUPIN (EXCLUDES BRIGHTON TWP., ATHENVILLE, SCOTTVILLE, GIRARD & AREA N. THEREOF), MONROE, MONTGOMERY, WASHINGTON (VENEDY TWP.), MADISON (EXCLUDES ALTON & VIC.) & ST. CLAIR COUNTIES		
ELECTRICIAN	22.71	28%

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* ELEC0649B 01/01/1994

	Rates	Fringes
CALHOUN, GREENE, JERSEY, MACOUPIN (SW CORNER), & MADISON (E. ALTON, ALTON, WOOD RIVER & HARTFORD) COUNTIES		
LINEMEN	21.66	6.41+3%
GROUNDMEN, TRUCK DRIVERS	18.97	6.41+3%

ELEC0702F 09/02/1991

	Rates	Fringes
BOND (E 1/2), & WASHINGTON (OKAWVILLE & VENDY TWPS.) COUNTIES		
LINE CONSTRUCTION		
LINEMAN	22.90	1.75+16.5%
GROUNDMAN EQUIPMENT OPERATOR	19.53	1.75+16.5%
GROUNDMAN	14.54	1.75+16.5%

ENGI0520A 08/01/1993

	Rates	Fringes
BOND, CALHOUN, CLINTON, GREENE, JERSEY, MACOUPIN, MONROE, MONTGOMERY, & WASHINGTON COUNTIES		
POWER EQUIPMENT OPERATORS		
GROUP 1:	22.45	5.52
GROUP 2:	17.74	5.52
GROUP 3:	16.90	5.52
GROUP 4:	16.57	5.52
GROUP 5:	23.00	5.52
GROUP 6:	23.30	5.52
GROUP 7:	23.58	5.52

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Cranes; Draglines; Shovels; Skimmer Scoops; Clamshells or Derrick Boats; Piledrivers; Crane-type Backhoes; Asphalt Plant Op; Concrete Plant Operator; Dredges; Asphalt Spreading Machines; Locomotives; Cableways or Tower Machines; Hoists; Hydraulic Backhoes; Ditching Machines or Backfiller; Cherry Pickers; Overhead Crane; Roller; Concrete Paver; Concrete Breakers & Pumps; Bulk Cement Plants; Cement Pumps; Derrick Type Drills; Boat Operators; Motor Graders or Pushcats; Scoops or Tournapulls; Bulldozers; Eneloaders or Forklifts; Power Blade or Elevating Graders; Winch Cats; Boom or Winch Trucks or Boom Tractors, Pipewrapping or Painting Machines; Drills (other than derrick type); Mud Jacks; Well Drilling Machines; Mixers; Conveyors (two); Air Compressors two; Water Pumps regardless of size; Welding Machines two; Siphons or jets two; Winch Heads or Apparatus Two; Light Plants two; Tractors regardless of size Straight (tractor only); Firemen on Stationary Boilers; Automatic Elevators; Form Grading Machines; Finishing Machines; Power Sub-Grader or Ribbon Machine; Longitudinal Floats; Distribution Operator on Trucks; Winch Heads or Apparatuses (1); Excavators; Mobile Track Air and Heater (two to five); Heavy Equipment Greaser and all other Operators not listed below.

GROUP 2: Air Compressor One; Water Pump regardless of size one; Welding Machine One; 1-Bag Mixer One; Conveyor One; Siphon or Jet; Light Plant One; Heater One; Immobile Track Air One.

GROUP 3: Firemen on Whirlies and Asphalt Spreader Oilers; Heavy Equipment Oilers; Truck Cranes; Monigans; Large (Over 65 ton rate Capacity); Concrete Plant Oiler and Black Top Plant Oiler.

GROUP 4: Oilers

GROUP 5: Master Mechanic; Operators On Equipment with Booms, including Jibs; One Hundred Feet and over; and less than 150 feet.

GROUP 6: Operators on Equipment with Booms, inclduing jibs, 150 feet and over, and less than 200 feet.

GROUP 7: Operators on Equipment with Booms, including jibs, 200 Feet and over; Tower Cranes and Whirley Cranes.

ENGI052QC 08/01/1993

POWER EQUIPMENT OPERATORS	Rates	Fringes
GROUP 1:	22.45	5.52
GROUP 2:	17.74	5.52
GROUP 3:	16.90	5.52
GROUP 4:	16.57	5.52
GROUP 5:	23.00	5.52
GROUP 6:	23.30	5.52
GROUP 7:	23.58	5.52

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes; Draglines; Shovels; Skimmer Scoops; Clamshells or Derrick Bosts; Pilderivers; Crane-Type Backhoes; Asphalt Plant Operator; Concrete Plant Operator; Dredges; Asphalt Spreading Machines; Locomotives; Cableways or Tower Machines; Hoists; Hydraulic Backhoes; Ditching Machines or Backfiller; Cherry pickers; Overhead Crane; Roller; Concrete Paver; Concrete Breakers & Pumps; Bulk Cement Plants; Cement Pumps; Derrick Type Drills; Boat Operators; Motor Graders or Pushcats; Scoops or Tournapulls; Bulldozers; Endloaders or Forklifts; Power Blade or Elevating Graders; Winch Cats; Boom or Winch Trucks or Boom Tractors, Pipewrapping or Painting Machines; Drills (other than derrick type); Mud Jacks; Well Drilling Machines; Mixers; Conveyors (two); Air Compressors Two; Water Pumps Regardless of Size; Welding Machines Two; Siphons or Jets Two; Winch Heads or Apparatus Two; Light Plants Two; Tractors Regardless of size Straight (tractor only); Firemen on Stationary Boilers; Automatic Elevators; Form Grading Machines; Finishing Machines; Power Sub-Grader or Ribbon Machine; Longitudinal Floats; Distribution Operator on Trucks; Winch Heads or Apparatuses (1); Excavators; Mobile Track air and Heater (two to five); Heavy Equipment Greaser and all other operators not listed below.

GROUP 2: Air Compressor One; Water Pump Regardless of size one; Welding Machine One; 1-Bag Mixer one; Conveyor One; Siphon or Jet; Light Plant One; Heater One; Immobile Track Air One.

GROUP 3: Firemen on whirlies and Asphalt Spreader Oilers; Heavy Equipment Oilers; Truck Cranes; Monigans; Large (over 65 ton rate capacity); Concrete Plant Oiler and Black Top Plant Oiler.

GROUP 4: Oilers

GROUP 5: Master Mechanic; Operators on Equipment with Booms, Including Jibs, One Hundred Feet and Over; And Less than 150 Feet.

GROUP 6: Operators on Equipment with Booms, Including Jibs, 150 Feet and over, and Less Than 200 Feet.

GROUP 7: Operators on Equipment with booms, Including Jibs, 200 Feet and over; Tower Cranes and Whirley Cranes.

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* IRON0046F 05/01/1994

	Rates	Fringes
GREENE (N 1/2), MACOUPIN (N. OF SUMMERVILLE), & MONTGOMERY (N. OF LITCHFIELD & HILLSBORO) COUNTIES		
IRONWORKERS	18.29	6.85

IRON0392C 09/01/1993

	Rates	Fringes
BOND, CALHOUN, CLINTON, GREENE (S 1/2), JERSEY, MACOUPIN (SUMMERVILLE & S. THEREOF), MADISON, MONROE, MONTGOMERY (LITCHFIELD, HILLSBORO, & S. THEREOF), ST. CLAIR, & WASHINGTON COUNTIES		
BRIDGES, LOCKS, AND DAMS ON THE MISSISSIPPI RIVER		
IRONWORKERS	20.46	6.65
ALL OTHER WORK:		
IRONWORKER	19.30	6.40

IRON0396F 08/01/1993

	Rates	Fringes
BRIDGES, LOCKS, & DAMS ON THE MISSISSIPPI RIVER		
IRONWORKERS	20.46	6.65

LABO0044B 08/01/1993

	Rates	Fringes
MADISON (COLLINSVILLE) COUNTY		
LABORER		
GROUP 1	16.65	6.10
GROUP 2	16.90	6.10
GROUP 3	17.15	6.10
GROUP 4	18.175	6.10

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00084B 08/01/1993

GREENE (Roodhouse) & MONTGOMERY (Litchfiled) COUNTIES	Rates	Fringes
LABORERS		
GROUP 1	21.00	1.75
GROUP 2	21.25	1.75
GROUP 3	21.50	1.75
GROUP 4	22.525	1.75

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LAB00100A 08/01/1993

ST CLAIR (East St Louis & Vicinity) COUNTY	Rates	Fringes
HEAVY CONSTRUCTION		
GROUP 1	19.10	4.05
GROUP 2	19.65	4.05
GROUP 3	19.35	4.05
GROUP 4	19.365	4.05
GROUP 5	19.525	4.05

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers

GROUP 2 - Brick mason and plasterer tenders

GROUP 3 - Work in septic tanks, cess pools or dry well (old or new); All feeders, mixers and nozzlemen on gunnite or sandblasting work; When handling creosoted materials; When raking or luting asphalt; While burning and cutting with a torch; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies;

GROUP 4 - Working on bottom of sewer trenches on final grading, laying or caulking of performed sectional sewer pipe

GROUP 5 - Dynamite men and powder man

HIGHWAY CONSTRUCTION		
GROUP 1	18.70	3.35
GROUP 2	18.95	3.35
GROUP 3	19.20	3.35
GROUP 4	20.225	3.35

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Ranking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking or performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00179E 08/01/1993

MADISON (Edwardsville, Marine, Livingston) COUNTY	Rates	Fringes
GROUP 1	18.51	4.24
GROUP 2	18.76	4.24
GROUP 3	19.01	4.24
GROUP 4	20.035	4.24

LABOREER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Ranking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking or performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00196B 08/01/1993

MONROE COUNTY	Rates	Fringes
LABORER:		
GROUP 1:	18.01	4.74
GROUP 2:	18.26	4.74
GROUP 3:	18.51	4.74
GROUP 4:	19.535	4.74

LABORER CLASSIFICATIONS

GROUP 1: General Laborer

GROUP 2: Work in septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on bottom of sewer trenches on the final grading, laying or caulking of

performed sectional sewer pipe; High Time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick mason and Plasterer Tenders

GROUP 4 - Dynamite and Powder men

LAB00197A 08/01/1993

	Rates	Fringes
ST. CLAIR (BELLEVILLE) COUNTY		
HOD CARRIERS	19.85	3.40

LAB00218B 08/01/1993

	Rates	Fringes
MADISON (ALTON) COUNTY		
GROUP 1	17.35	5.40
GROUP 2	17.60	5.40
GROUP 3	17.85	5.40
GROUP 4	18.875	5.40

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00338D 08/01/1993

	Rates	Fringes
MADISON (WOOD RIVER) COUNTY		
GROUP 1	17.35	5.40
GROUP 2	17.60	5.40
GROUP 3	17.85	5.40

GROUP 4 18.875 5.40

LABORER CLASSIFICATIONS

GROUP 1: General Laborers

GROUP 2: Work in septic tanks, Cess Pools, or Dry Wells (old or new); All feeders, Mixers and Nozzle men on Gunnite or Sandblasting Work; When handling creosoted materials; Raking or luting asphalt; Burning or Cutting with Torch; Working on bottom of sewer trenches on the final Grading, Laying or Caulking of performed sectional sewer pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, Mixing and Applying of mastic such as Sulfa-seal and/or other Coal derivative

GROUP 3: Brick Mason and Plasterer Tenders

GROUP 4: Dynamite and Power Men

LAB00382C 08/01/1993

	Rates	Fringes
MADISON (TROY) COUNTY		
GROUP 1	18.66	4.09
GROUP 2	18.91	4.09
GROUP 3	19.16	4.09
GROUP 4	20.185	4.09

LABORERR CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00397C 08/01/1993

	Rates	Fringes
MADISON (GRANITE CITY & Vicinity) COUNTY		

HEAVY CONSTRUCTION

GROUP 1	19.10	4.05
GROUP 2	19.60	4.05
GROUP 3	19.375	4.05
GROUP 4	19.625	4.05
GROUP 5	20.425	4.05

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers

GROUP 2 - Brick mason and plasterer tenders

GROUP 3 - Cutting, welding and burning with torch

GROUP 4 - Oxygen lancing;

GROUP 5 - Dynamite men and powder man

HIGHWAY CONSTRUCTION

GROUP 1	18.70	4.05
GROUP 2	18.95	4.05
GROUP 3	19.20	4.05
GROUP 4	20.225	4.05

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0454B 08/01/1993

	Rates	Fringes
ST. CLAIR (EASR ST. LOUIS) COUNTY		
HOD CARRIERS	22.05	1.20

LAB00459B 08/01/1993

ST, CLAIR (BELLEVILLE, FREEBURG, NEW ATHENS & VICINITY) COUNTY	Rates	Fringes
LABORER		
GROUP 1	16.91	5.84
GROUP 2	17.16	5.84
GROUP 3	17.41	5.84
GROUP 4	18.435	5.84

LABORER CLASSIFICATION

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00474A 08/01/1993

MADISON (GLEN CARBON) COUNTY	Rates	Fringes
GROUP 1	18.71	6.04
GROUP 2	18.96	6.04
GROUP 3	19.21	6.04
GROUP 4	20.235	6.04

LABORERS CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal

derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0548A 08/01/1993

WASHINGTON (NASHVILLE & ASHLEY) COUNTY	Rates	Fringes
GROUP 1	16.71	6.04
GROUP 2	16.96	6.04
GROUP 3	17.21	6.04
GROUP 4	18.235	6.04

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0581B 08/01/1993

CLINTON (CARLYLE) COUNTY	Rates	Fringes
GROUP 1	17.51	5.24
GROUP 2	17.76	5.24
GROUP 3	18.01	5.24
GROUP 4	19.035	5.24

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of

performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00622B 08/01/1993

BOND (GREENVILLE) COUNTY	Rates	Fringes
GROUP 1	18.40	4.35
GROUP 2	18.65	4.35
GROUP 3	18.90	4.35
GROUP 4	19.925	4.35

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00646B 08/01/1993

JERSEY (JERSEYVILLE) COUNTY	Rates	Fringes
GROUP 1	18.80	3.95
GROUP 2	19.05	3.95
GROUP 3	19.30	3.95
GROUP 4	20.325	3.95

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or

new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00670A 08/01/1992

	Rates	Fringes
ST CLAIR (O'Fallon, Scott Air Force Base, Shiloh, Lebanon & Vicinity) & CLINTON (Trenton & Vicinity) COUNTIES		
HEAVY CONSTRUCTION		
GROUP 1	18.20	4.25
GROUP 2	18.45	4.25
GROUP 3	18.80	4.25
GROUP 4	19.05	4.25

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers

GROUP 2 - Workmen on bottom of trench; Burning or cutting with torch; Cooking and handling of hot mastic materials; Handling creosote or other materials harmful to skin; Using chain saw; High time (20 feet or over)

GROUP 3 - Brick mason and plasterer tenders

GROUP 4 - Dynamite men and powder men

HIGHWAY CONSTRUCTION		
GROUP 1	17.80	4.25
GROUP 2	18.05	4.25
GROUP 3	18.30	4.25
GROUP 4	19.325	4.25

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or

sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0674A 08/01/1993

	Rates	Fringes
MADISON (ST. JACOB) COUNTY		
GROUP 1	21.95	.80
GROUP 2	22.20	.80
GROUP 3	22.45	.80
GROUP 4	23.475	.80

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0677A 08/01/1993

	Rates	Fringes
BOND COUNTY (Pocahontas)		
LABORERS		
GROUP 1	22.15	.60
GROUP 2	22.40	.60
GROUP 3	22.65	.60
GROUP 4	23.675	.60

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0680A 08/01/1993

	Rates	Fringes
MADISON (HIGHLAND) COUNTY		
GROUP 1	18.56	4.19
GROUP 2	18.81	4.19
GROUP 3	19.06	4.19
GROUP 4	20.085	4.19

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0742A 08/01/1992

	Rates	Fringes
ST. CLAIR (MASCOUTAH) & CLINTON (NEW BADEN) COUNTIES		
LABORER		

GROUP 1:	17.16	4.84
GROUP 2:	17.41	4.84
GROUP 3:	17.66	4.84
GROUP 4:	18.685	4.84

LABORER CLASSIFICATIONS

GROUP 1: General Laborers.
GROUP 2: Work in septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on bottom of sewer trenches on the final grading, laying or caulking of perpformed sectional sewer pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives.
GROUP 3: Brick mason and plasterer tenders
GROUP 4: Dynamite and powder men.

LABO0835A 08/01/1993

	Rates	Fringes
GREENE (ROADHOUSE) COUNTY		
LABORER HEAVY CONSTRUCTION		
GROUP 1	20.75	2.00
GROUP 2	21.00	2.00
GROUP 3	21.25	2.00
GROUP 4	22.275	2.00

LABORER CLASSFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatoves

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LAB00950A 08/08/1993

MACOUPIN (CARLINVELLE, GILLESPIE, MT. OLIVE, SHIPMAN & STAUNTON) COUNTY	Rates	Fringes
LABORER:		
GROUP 1:	17.56	5.19
GROUP 2:	17.81	5.19
GROUP 3:	18.06	5.19
GROUP 4:	19.085	5.19

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.
GROUP 2: Work in septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on bottom of sewer trenches on the final grading, laying or caulking of performed sectional sewer pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives.
GROUP 3: Brick mason and plasterer tenders.
GROUP 4: Dynamite and powder men.

LAB00968A 08/01/1993

CALHOUN (HARDIN) COUNTY	Rates	Fringes
GROUP 1	22.45	.30
GROUP 2	22.70	.30
GROUP 3	22.95	.30
GROUP 4	23.975	.30

LABORERS CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Ranking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking or performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work

performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO1084A 08/01/1993

	Rates	Fringes
MONTGOMERY (HILLSBORO) AND BOND (SORENTO) COUNTIES		
LABORER:		
GROUP 1	16.35	6.40
GROUP 2	16.60	6.40
GROUP 3	16.85	6.40
GROUP 4	17.875	6.40

LABORER CLASSIFICATIONS

GROUP 1: General Laborer
GROUP 2: Work in septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on bottom of sewer trenches on the final grading, laying or caulking of performed sectional sewer pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives.
GROUP 3: Brick mason and plasterer tenders.
GROUP 4: Dynamite and powder men.

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* PAIN0058B 04/01/1994

	Rates	Fringes
BOND, CALHOUN, CLINTON, GREENE, JERSEY, MACOUPIN, MADISON, MONROE, MONTGOMERY, ST. CLAIR, & WASHINGTON COUNTIES		
INDUSTRIAL:		
BRUSH	19.80	4.20
SPRAYING BLASTING STEAM CLEANING	21.80	4.20

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* PAIN0058C 04/01/1994

	Rates	Fringes
BOND, CALHOUN, CLINTON, GREENE, JERSEY, MACOUPIN, MADISON,		

MONROE, MONTGOMERY, ST. CLAIR, & WASHINGTON COUNTIES

BRIDGES:

BRUSH	19.80	4.20
SPRAY + BLAST	21.80	4.20

PLAS0090A 08/01/1993

	Rates	Fringes
BOND, CALHOUN, CLINTON (W 1/2, EAST TO BUT NOT INCL. CARYLE), GREENE, JERSEY, MACOUPIN, MADISON, MONROE, MONTGOMERY, & ST. CLAIR COUNTIES		
CEMENT MASONS	19.75	6.02

PLAS0667A 04/01/1993

	Rates	Fringes
LINTON (E 1/2 INCLUDING CARYLE) & WASHINGTON COUNTIES		
CEMENT MASONS	19.75	2.25

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* TEAM0001I 05/01/1994

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	17.125	4.30+a
GROUP 2	17.525	4.30+a
GROUP 3	17.725	4.30+a
GROUP 4	17.975	4.30+a

FOOTNOTE: a-$89.00 per week.

TRUCK DRIVER CLASSIFICATIONS

GROUP I
Drivers on 2 Axle Trucks Hauling Less Than 9 Tons. Air Compressor and Welding Machines & Brooms, Including Those Pulled by Separate Units, Warehousemen, Greasers & Tiremen, Pickup Trucks When Hauling Material, Tools, or Men to and from & on the Job Site, & Fork Lifts up to 6,000 LB. Capacity.

GROUP II
Two or Three Axle Trucks Hauling more than 9 Ton But Hauling less than 16 Ton, A-Frame Winch Trucks, Hydrolift Trucks, or Similar Equipment When Used For Transportation Purposes. Fork Lifts Over 6,000 LB. Capacity, Winch Trucks, & Four Axle Combination Units.

GROUP III
Two, Three or Four Axle Trucks Hauling 16 Ton or more, Drivers on

Water Pulls. Five Axle or more Combination Units.

GROUP IV
Lowboy & Oil Distributors.

WELDERS - Rate for craft to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

END OF GENERAL DECISION

ZERO ACCIDENTS

SECTION 01100
SPECIAL CLAUSES

INDEX

Attachments:

Submittal Register (ENG Form 4288)
Transmittal Form (ENG Form 4025)
Construction Quality Control Daily Report Form

1. **COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK.** The Contractor shall commence work under this contract within ten (10) calendar days after the date of receipt by him of Notice to Proceed, prosecute said work diligently, and complete the entire work not later than 31 December 1994 after Notice of Award for stack emission (lead) removal and restoration work.

1.1. **START WORK.** Evidence that the Contractor has started procurement of materials, preparation and submission of work plans, preparation of subcontracts, and other preparatory work will satisfy the requirement that work commence within ten (10) calendar days after receipt of Notice to Proceed. Therefore, work need not be commenced at the construction site within ten (10) calendar days. (based on FAR 52.212-3)

2. **CONTRACT DRAWINGS AND SPECIFICATIONS.**

2.1. **NOTIFICATION OF DISCREPANCIES.** The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer of any discrepancies. Dimensions and notations marked

on drawings shall be followed in lieu of scale measurements. The Contractor shall compare all drawings and verify the actual locations with a magnetometer before laying out the work.

3. **SUBMITTALS.**

3.1. **SUBMITTAL REGISTER (ENG FORM 4288).** The Contractor shall complete columns p, q, and r within twenty (20) calendar days after the preconstruction conference and return six (6) completed copies to the Contracting Officer's Representative for approval. Dates entered in columns p and q shall not include mail or delivery time. The ENG Forms 4288 will become a part of the contract after approval. Column b shall be left blank for use later to record the respective transmittal and item number indicated for the submittal items(s) listed on the transmittal form entitled: "TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE" (ENG Form 4025).

3.1.1. **Scheduling.** Drawings on component items forming a system or that are interrelated shall be scheduled to be correlated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 20 calendar days exclusive of mailing time) will be allowed on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals or resubmittals for such items.

3.1.2. **Application to Contract.** The approved submittal register will become a part of the contract and Contractor will be subject to requirements thereof. This register and the progress schedules shall be coordinated.

3.2. **SUBMITTAL PROCESS.** The Contractor shall submit all items listed or specified in the other sections of these specifications. The Contracting Officer may request submittals in addition to those listed when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same used in the contract drawings. Submittals shall be made in the minimum of six copies and to the respective addresses set forth below. Each submittal shall be complete and in sufficient detail for ready determination of compliance with the contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) Engineer and each respective transmittal form (ENG Form 4025) shall be stamped, initialed, and dated by the CQC Engineer certifying that the accompanying submittal complies with the contract requirements.

3.2.1. **Categories of Submittals.** The categories of items specified to be submitted shall be submitted as follows:

3.2.1.1. **Category I.** All items listed as Category I submittals or informational copy in the various sections shall be mailed directly to the Area Engineer.

Each required submittal which is in the form of a drawing shall be submitted as a reproducible.

3.2.1.2. **Category II.** Except as noted below, data for all items listed as Category II Submittals in the various sections shall be submitted in six (6) copies to the Area Engineer using the transmittal form.

3.2.2. **Control of Submittals.** The Contractor shall carefully control his procurement operations to assure that each individual submittal is made on or before the corresponding date scheduled on his approved "SUBMITTAL REGISTER."

3.2.3. **Transmittal Form (ENG Form 4025).** The sample transmittal form attached to this section shall be used for submitting both the Category I and Category II submittals, in strict accordance with the instructions on the reverse side thereof. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care should be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item. A separate transmittal form shall be attached to each copy of the data being submitted.

3.2.4. **Approval Action.**

3.2.4.1. **Category I.** All Category I submittals are subject to advance approval. No construction or installation shall be done on any item identified as Category I until all shop drawings for that item have been approved. Upon completion of review of Category I submittals, the drawing reproducible and print and other pertinent data will be identified as having received approval by being so stamped and dated. The drawing print and six (6) sets of all catalog data and descriptive literature will be retained by the Contracting Officer and the drawing reproducible and two (2) sets of catalog data and descriptive literature will be returned to the Contractor.

3.2.4.2. **Category II.** Submittals may be required for "Approval" or for "Information Only." Category II submittals "for approval" are considered to be "shop drawings" and Category II submittals "for information only" are not considered to be "shop drawings." Two (2) copies of Category II submittals for approval will be returned to the Contractor. Submittals for "Information Only" will not be returned to the Contractor. No Corps of Engineers' approval action will be required prior to incorporating these "Information Only" items into the work. These Contractor approved "Information Only" submittals will be used to verify that material received and used in the job is the same as that described in the plans and specifications and will be used as record copies. Delegation of this approval authority to the CQC Engineer does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications and will not prevent the Contracting Officer from requiring removal and replacement if nonconforming material is incorporated in the work. This obligation does not relieve the Contractor from the requirement to furnish samples for testing by the Government laboratory or check testing by the Government in those instances where the technical specifications so prescribe.

3.2.5. **Meaning of Approvals.** The approval of the submittals by the Contracting Officer or his authorized representative shall not be construed as

a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist as the Contractor, under the CQC requirements of this contract, is responsible for the dimensions and design of adequate connections, details and satisfactory construction of all work. After submittals have been approved by the Contracting Officer or his authorized representative, no resubmittal for the purpose of substituting materials or equipment will be given consideration unless accompanied by an acceptable explanation as to why a substitution is necessary.

3.2.6. **When Not Approved.** The Contractor shall make all corrections required by the Contracting Officer or his authorized representative and promptly furnish a corrected submittal in the form and number of copies as specified for initial submittals. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, notice as required under the CONTRACT CLAUSES clause entitled "Changes" should promptly be given to the Contracting Officer.

3.2.7. **Withholding of Payment.** Payment for materials incorporated into the work will not be made if required approvals have not been obtained.

3.3. **CERTIFICATES OF COMPLIANCE.** Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in three copies. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements. (EFARS 52.2/9108(c))

3.4. **PURCHASE ORDERS.** Each purchase order issued by the Contractor or his subcontractors for materials and equipment to be incorporated into the project shall (1) be clearly identified with the applicable DA contract number, (2) carry an identifying number, (3) be in sufficient detail to identify the material being purchased, (4) indicate a definite delivery date, and (5) display the DMS priority rating. Copies of purchase orders shall be furnished to the Contracting Officer when the Contractor requests assistance for expediting deliveries of equipment or materials, or when requested by the Contracting Officer for the purpose of quality assurance review.

4. **PHYSICAL DATA.** "Site Investigation and Conditions Affecting the Work," information and data furnished or referred to below are furnished for general information only and the Government may not be held liable for any interpretation or conclusions drawn therefrom by the Contractor.

4.1. **SOURCE OF DATA.** The physical conditions indicated on the drawings and in the specifications are the result of site investigations by surveys probings, etc.

4.2. **WEATHER.** Weather conditions shall have been investigated by the Contractor to satisfy himself as to the hazards likely to arise therefrom. Complete weather records and reports may be obtained from the local U.S. Weather Bureau.

4.3. **ACCESS ROUTES.** Transportation facilities shall have been investigated by the Contractor to satisfy himself as to the existence of access highways and railroad facilities. (based on FAR 52.236-4)

4.4. **TELEPHONE SERVICE.** Telephone service for Contractor facilities will be the responsibility of the Contractor.

5. **AVAILABILITY OF UTILITY SERVICES.** Utility connections for water, sewer, and electricity shall be provided by the Contractor.

6. **ANTICIPATED WEATHER DELAYS.** The listing below defines monthly anticipated adverse weather for the contract period and is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the geographic location of the project. Over the duration of the project (9 months = 78). Use 15 weather days.

MONTHLY ANTICIPATED ADVERSE WEATHER WORK DAYS

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(6)	(6)	(5)	(5)	(5)	(8)	(13)	(11)	(4)	(4)	(5)	(5)

6.1. **WEATHER TIME EXTENSIONS.**

6.1.1. **Evaluation.** The above schedule of anticipated adverse weather will constitute the base line for monthly (or portion thereof) weather time evaluations. Upon acknowledgement of the Notice to Proceed and continuing throughout the contract on a monthly basis, actual adverse weather days will be recorded on a work day basis (including weekends and holidays) and compared to the monthly anticipated adverse weather schedule above. For purposes of this paragraph, the term "actual adverse weather days" shall be scheduled work days impacted by adverse weather.

6.2. **THE CONTRACTOR'S SCHEDULE** must reflect the above anticipated adverse weather delays on all weather dependent activities.

7. **ILLINOIS SALES AND USE TAX.**

7.1. In the event goods, wares or merchandise on which the Contractor has paid Illinois sales or use tax become an integral part of the project, the Contractor shall obtain appropriate forms from the Illinois State Tax Commission for recording the amount of purchases of such goods, wares, or merchandise, and shall complete, execute, and deliver them to the Contracting Officer prior to final settlement of the contract. The Contractor shall provide and report all

data and information which may be necessary or required to enable the Contracting Officer to obtain all refunds from the Illinois Tax Commission to which the Federal Government may be entitled.

7.2. The Contractor shall insert a clause containing the substance of the foregoing paragraph 12.1 in every first tier subcontractor or vendor to include such a clause in any subcontract or purchase order which he places. The Contractor shall obtain completed forms from his subcontractor and suppliers for submission to the Contracting Officer before final settlement of the contract.

8. **DAILY WORK SCHEDULES.** In order to closely coordinate work under this contract, the Contractor shall prepare for and attend a weekly coordination meeting with the Contracting Officer at which time the Contractor shall submit for coordination and approval, his proposed daily work schedule for the following week period. Protection of adjoining areas shall be included with the Contractor's proposed week work schedule. At this meeting, the Contractor shall also submit his schedule of proposed dates and times of all preparatory inspections to be performed during the week. The items of work listed on the proposed week schedule are to be reflected in the bar charts. Coordination action by the Contracting Officer relative to these schedules will be accomplished during these weekly meetings.

9. **AS-BUILT DRAWINGS.** The Contractor shall maintain two separate sets of red-lined full scale, as-built construction drawings marked-up to fully indicate as-built conditions. These drawings shall be maintained in a current condition at all times until completion of the work and shall be available for review by Government personnel at all times. The location, general description, approximate depth below finished grade of all underground utilities encountered, and all variations from the contract drawings, for whatever reason, including those occasioned by optional materials and the required coordination between trades, shall be indicated. These variations shall be shown in the same general detail utilized in the initial contract drawings. Both sets of as-built construction drawings shall be furnished to the Contracting Officer on the date of final inspection. The submittal requirement for as-built construction drawings shall be shown as a separate activity on the Contractor prepared progress bar chart or network analysis system, whichever is applicable.

10. **ACCOMMODATIONS FOR GOVERNMENT INSPECTORS.** (Per basic contract)

11. **APPLICABILITY OF DAVIS-BACON ACT.** Clause "Payrolls and Basic Records" of the **CONTRACT CLAUSES** is applicable to such operations.

12. **APPLICABILITY OF THE FEDERAL INFORMATION RESOURCES MANAGEMENT REGULATION/FEDERAL INFORMATION PROCESSING (FIRMR/FIP) REQUIREMENTS.** The United States congress passed the Brooks Act in 1965 which gave the General Services Administration (GSA) sole authority to procure FIP resources. GSA implemented the FIRMR in order to regulate the acquisition of FIP resources. Reference Title 41, CFR, Chapter 201, Federal Information Resources Management Regulation.

12.1. **DETERMINATION OF INCIDENTAL EXCEPTIONS.**

12.1.1. The contracts have been developed to resolve time-critical environmental remediations for Federal agencies. The basic contract does not contemplate the delivery of FIP resources for use by a Federal agency. The requirement of Section 201-1.002-1(b)(1) is not applicable.

12.1.2. The basic contract does not specially identify any equipment that the Contractor must purchase in performance of the contract. The requirement of Section 201-1.002(b)(2) is not applicable.

12.1.3. Reference Section 201-1.002-1 (b) (i) and (ii), FIP resources used by the contractor are incidental either when none of the principal tasks of performing the contract depend directly on the use of FIP resources or that the requirement of the contract does not substantially restrict the Contractor's discretion in the acquisition and management of FIP resources.

12.1.4. Section 201-1.002-1 (b) (3) is not applicable when FIP resources is incidental to the performance of the contract.

12.2. **REPORTABLE UTILIZATION OF FIP RESOURCES.** It is assumed that FIP Equipment utilized in this contract will vary by each individual Delivery Order and where identified would probably be "embedded" FIP equipment.

12.2.1. FIP Equipment (defined) means any equipment or interconnected system or subsystems of equipment used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception or data or information.

12.2.2. "Embedded" FIP Equipment is usually an integrated part of the product where the principal task of the product is not the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information.

12.2.2.1. Where FIP Equipment is embedded and would need to be substantially modified to be used as other than an integral part of the product, or its value is less than $500,000 or 20 percent (%) of the cost of the product, whichever is lower, the FIRMR does not apply.

12.3. **LISTING OF FIP EQUIPMENT.** The Contractor shall provide an attachment to the Cost Proposal in each individual Delivery Order that lists all potential Contractor identifiable (permanently installed) FIP Equipment units utilizing electronic processors or components and their estimated costs. Supplemental support items shall include switches, wire, cable, and access arrangements. Final identification of applicable FIP Equipment and monetary value will be submitted by the USACE-TM to the Contracting Officer.

SECTION 01401
SAFETY, HEALTH AND EMERGENCY RESPONSE

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APPENDIX D - STATE OF ILLINOIS REGULATIONS

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SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 808
SPECIAL WASTE CLASSIFICATIONS

SUBPART A: GENERAL PROVISIONS

SUBPART B: CLASSES OF SPECIAL WASTE

SUBPART C: CRITERIA AND DATA REQUIREMENTS

SUBPART D: REQUEST FOR WASTE CLASSIFICATION

SUBPART E: REVIEW OF CLASSIFICATION REQUESTS

SUBPART F: WASTESTREAM CLASSIFICATION DETERMINATIONS

SUBPART G: MODIFICATION, APPEAL AND ENFORCEMENT

SUBPART H: CATEGORICAL AND CHARACTERISTIC WASTES

AUTHORITY: Implementing Sections 21, 22, 22.01 and and authorized by Section 27 of the Environmental Prot Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1021, 1022, 10 1022.9 and 1027).

SOURCE: Adopted in R89-13A at 14 Ill. Reg. 14043, eff August 15, 1990.

SUBPART A: GENERAL PROVISIONS

Section 808.100 Purpose, Scope and Applicability

a) This Part provides a means by which persons may ob classification or declassification of special (non-Res Conservation and Recovery Act (RCRA) (42 U.S.C. 6 seq.) waste as defined in Section 808.110, based u degree of hazard of the waste or other characteristi assure that the waste receives appropriate handling. Part does not apply to materials which are not s wastes as defined by the Act.

b) This Part allows any person generating such special to request waste classification and prescribes procedur which applicants may supply detailed information in to establish the appropriate waste classification. Fo purposes of this Part, the term "classification" inc declassification. Waste which has been declassified not be deemed special waste until further action t contrary by the Agency pursuant to this Part.

c) Special wastes that are declassified pursuant to this Pa not subject to any of the special waste hauling, disposa reporting requirements of 35 Ill. Adm. Code 809, bu still subject to other Parts of 35 Ill. Adm. Code: Subt which govern the transport, treatment, storage and h of non-special wastes.

Section 808.101 Transitional Rule

Wastestreams which have been declassified by the Ag pursuant to Section 22.9(c) of the Act prior to the effectiv of these rules shall remain declassified for a period of not than two years following the effective date of these rules, u extended by the Board in a variance proceeding. In orc accommodate its workload, the Agency may, by giving no than 180 days' prior written notice, require generators to reapplication by a date certain within this two year time p The Agency may extend this reapplication deadline for a p of not more than an additional 180 days, but in no event ma Agency extend the deadline to a date more than two

c) Subpart H contains waste classifications based on source or characteristics to which specific wastestreams have been assigned.

Section 808.241 Default Classification of Special Wastes

Any special (non-RCRA) waste is a Class A special waste unless and until the Agency determines otherwise pursuant to this Part.

Section 808.242 Special Handling Waste

The Agency may determine that a waste which is declassifiable pursuant to Section 808.245(d) is a special handling waste. Any such waste shall be so identified by the Agency, together with appropriate conditions on its form and mode of containment in transport or storage. A declassifiable waste which is determined to be a special handling waste is a Class B special waste.

BOARD NOTE: This rule sets the special handling flag. A special handling waste will require manifesting, regardless of the toxic score under Section 808.245, to protect the waste hauler, the treatment or disposal operator and their employees.

Section 808.243 Wastes Categorized by Source

a) Subpart H identifies certain categories of wastes, based on the type of source or generator, and assigns them to classes.

b) A waste which meets the criteria for inclusion within a category based on the type of source or generator is a special waste of the class specified for that category.

Section 808.244 Wastes Categorized by Characteristics

a) Subpart H identifies certain categories of waste, based on their characteristics, and assigns them to classes.

b) A waste which meets the criteria for inclusion within a category based on its characteristics is a special waste of the class specified for that category.

Section 808.245 Classification of Wastes

Special wastes which are subject to this Subpart shall be classified or declassified based on toxic score as follows:

a) Compute the toxic score for the wastestream pursuant to Appendix B or, where applicable, pursuant to Section 808.431, utilizing a data base which meets the standards of Section 808.302. However, if use of Appendix B or Section 808.431 is demonstrated to the Agency to be inapplicable or unavailable for the wastestream, the generator may employ a bioassay procedure approved by the Agency pursuant to Section 808.302, solely for the purpose of determining if the waste in its undiluted form results in no behavioral response from the exposed test organisms and, thus, warrants a toxic score of 0 (zero). Where applicable, the toxic score shall include the maximum volume of waste to which such score applies.

b) Except as authorized under subsection (e), a wastestream receiving a toxic score of 3 shall be deemed a Class A special waste.

c) Except as authorized under subsection (e), a wastestream receiving a toxic score of 1 or 2 shall be deemed a Class B special waste; however, such waste shall be deemed a Class A special waste if the Agency determines that it exhibits one or more of the following characteristics:

1) The physical form of the waste renders it difficult to manage in transport, storage or handling prior to final disposition, or in a landfill (Examples of wastes possessing such form are wastes containing [illegible] liquids, and wastes in finely divided form which are susceptible to airborne dispersal.);

2) The chemical properties of the waste, if exposed to the atmosphere or to an aqueous environment, render it difficult to manage in the event of a leak, spill or other loss of containment during transport, storage or handling prior to final disposition, or in a landfill (Examples of wastes possessing such properties are wastes which produce noxious or toxic fumes or gases in sufficient concentration and quantity to pose a threat to the public health or the environment, wastes which are ignitable or flammable, wastes which are readily soluble in water, and wastes which are highly mobile in an aqueous environment, including in groundwater.); or

3) The unstable nature of the waste renders it difficult to contain during transport, storage or handling prior to final disposition, or in a landfill (Examples of wastes possessing such an unstable nature are wastes which are corrosive or reactive, and any other wastes which, under foreseeable conditions, may cause the premature failure of waste containment devices and structures.).

d) A wastestream receiving a toxic score of 0 shall be declassified, except that such a waste that is determined by the Agency to be a special handling waste shall be deemed a Class B special waste.

e) Notwithstanding a wastestream's toxic score, the Agency may condition a lowered classification or a declassification of a special waste under this Section. Such conditions imposed by the Agency shall be limited to measures which the generator shall, by particular modes or forms of containment or treatment, assure that the dangerous characteristics of the wastes are avoided or reduced. (Examples of such measures are neutralization of acidic wastes prior to shipment, containment or encapsulation of finely divided wastes, and treatment of ignitable wastes so as to preclude ignition.) However, under no circumstances shall a wastestream with a toxic score of 3 be declassified based solely upon its mode of containment.

f) All conditions or limitations imposed by the Agency relate to the toxic score (including, where applicable, maximum wastestream volume) and classification or declassification of a wastestream shall be specified in the Agency's determination.

SUBPART C: CRITERIA AND DATA REQUIREMENTS

Section 808.300 Introduction

This Subpart governs criteria and data requirements which shall be used to predict the degree of hazard pursuant to Section 808.245.

Section 808.301 Degree of Hazard Determination by Computer

a) The Agency may employ electronic data processing equipment and programs to accomplish the purposes of this Subpart. Any such program must assign a degree of hazard according to the method specified in Section 808.245.

b) The output generated by use of such equipment or such a program must display all data used in each degree of hazard prediction, together with the source of the data.

Section 808.402 Data Base and Bioassay Procedures

a) This Section governs the data base and bioassay procedures which may be employed to assess the physical, chemical and toxicological properties of waste constituents.

b) The data base, and any bioassay procedure utilized pursuant to Section 808.245(a), shall consist of and use data and procedures which the Agency determines are a reliable basis for decision. Reliability of a source of data and procedures shall be assessed by reference to such factors as, but not limited to, scientific validity; consistency with directly observable data, including monitoring data; and the consistency of results of repeated applications of the data, procedures and formulae. Sources of data may include, but are not limited to, the following:

1) Standard reference sources;

2) Material published or incorporated by reference by a federal regulation or by a regulation adopted by an agency of the State of Illinois;

3) The application under consideration and written communications between the applicant and the Agency or their representatives with respect to the application;

4) Data and procedures previously used by the Agency in other wastestream categorization determinations; or

5) Agency inspection, permitting and enforcement files relating to the generator or the wastestream, excluding complaint forms (except where the complainant will be available voluntarily for deposition and examination under oath at any hearing on appeal pursuant to Subpart G).

c) The Agency shall make available for inspection and copying by the public a list of the sources of data and bioassay procedures which it has previously utilized for purposes of this Section, excluding any data described in subsection (b)(3) of this Section that is protected from public disclosure pursuant to Sections 7 or 7.1 of the Act or pursuant to 35 Ill. Adm. Code 101 or 120.

SUBPART D: REQUEST FOR WASTE CLASSIFICATION

Section 808.400 Introduction

a) This Subpart specifies the procedures which shall be used to obtain a waste classification from the Agency.

b) A waste classification may be requested by generators of special waste, as specified in Subpart A.

Section 808.401 Application Forms

Persons applying for a waste classification shall use application forms provided or approved by the Agency.

Section 808.402 Application for Waste Classification

An application for waste classification shall, at a minimum, include the following information:

a) Basic information:

1) The name, address and phone number of the original generator;

2) The original generator's United States Environmental Protection Agency ("USEPA") identification number (35 Ill. Adm. Code 722.123) and the Agency's identification number, if the original generator has obtained either;

3) The name and address of any treater of the waste;

4) Any treater's USEPA identification number and Agency site number, if the treater has obtained either;

5) Whether any treater has a RCRA permit or interim status;

6) A chemical and physical analysis of the waste, as specified in Section 808.410;

7) A wastestream description, as specified in Section 808.413;

8) A quality assurance plan, as specified in Section 808.420;

9) A description of any current waste storage, treatment and disposal processes applicable to the wastestream;

10) Identification of the disposal site or sites to which the applicant proposes to send the waste, and the proposed modes of transportation;

BOARD NOTE: This information is requested to assist the Agency in reviewing the application. These rules do not preclude use of a disposal site which is not identified in the application for classification; and

11) Wastestream number of any supplemental wastestream permit issued for the waste pursuant to 35 Ill. Adm. Code 807.210, and the expiration date of any such permit.

b) The rationale for requesting classification, including all relevant calculations and other bases for conclusions; (If Appendix B of this Part has not been utilized for purposes of calculating the toxic score, such rationale shall indicate the reasons for using an alternative means of determining the toxic score, including an explanation of whether the alternative means chosen is equivalent to Appendix B.)

c) Data establishing that the waste is not a hazardous waste pursuant to 35 Ill. Adm. Code 721;

BOARD NOTE: Wastestream categorization is not applicable to RCRA hazardous wastes. If the generator anticipates that this will be an issue, the generator should include documentation supporting the claim that the waste is not a hazardous waste pursuant to 35 Ill. Adm. Code 721.

d) Data bearing on whether the waste is a special handling waste, including the physical form of the waste and the mode of containment, if any, during transport;

e) Whether the waste can be categorized by source, pursuant to Section 808.243, or by characteristic, pursuant to Section 808.244;

f) Sufficient physical, chemical and toxicological data to assign a degree of hazard pursuant to Section 808.430;

g) If necessary, results of toxicological testing, as specified in Section 808.431;

h) Such additional information as the generator believes is appropriate to show that the waste should be classified as the generator requests; and

i) Such additional information as the Agency determines is necessary to assign the waste to a class. The Agency may specify additional information by a request directed to the individual applicant

Section 808.410 Physical and Chemical Analyses

Physical and chemical analyses of wastes for purposes of this Subpart shall be conducted as follows:

a) Samples shall be representative of the wastestream and shall:

1) Include all waste phases;

2) Be taken from areas distributed spatially within the waste bulk; and

3) Be taken at suitable time intervals and over a sufficient period of time to account for variation in the wastestream through work shifts, seasons, etc.

b) The following properties shall be determined and reported:

1) The physical description of the wastestream, including, but not limited to, its temperature, color, phase and flow rate;

2) The pH of aqueous phases of the waste, or the pH of a 1:1 volume dilution of solid phases of the waste with distilled and buffered water;

3) The flashpoint of liquid phases by the Pennsky-Martens Closed Cup test method, specified in ASTM Standard D-93-79 or D-93-80, incorporated by reference at Section 808.111, or by a Setaflash Closed Cup tester, using the test method specified in ASTM standard D-3828-78, incorporated by reference at Section 808.111;

4) Results of an EP toxicity test, as specified in 35 Ill. Adm. Code 721.124; and

5) Density.

c) The waste shall be analyzed for its constituents as follows;

1) The analysis must include all materials introduced into each process generating the wastestream, and all materials which come into contact with products and materials produced by the process or in storage, including end products and impurities;

2) The analysis must include all constituents which will react with each other under the process conditions;

3) If available, the analysis must use the Chemical Abstracts Service (CAS) name and number for each constituent, or a name from the list of common names pursuant to Section 808.412. Otherwise, if the CAS name and number and such a common name is not available for the constituent, the person requesting classification shall provide a name and complete description of the constituent;

4) The analysis shall include a list of major constituents and concentrations which accounts for at least 99 percent of the mass of the waste. The list may include an entry for "other" or "unknown" if the significant trace constituents have been identified as provided in subsection (c)(5). The analysis shall list major constituents of the waste rounded to the nearest tenth of a percent, and shall be supported by a mass balance;

5) Significant trace constituents. The generator shall include a list and the concentration of all significant trace constituents, as defined in Section 808.411; and

6) The analysis shall identify all major constituents and significant trace constituents listed in 35 Ill. Adm. Code 721.Appendix H.

d) The analysis must report the average concentration or mass percentage and the expected range of each major constituent and significant trace constituent. The expected range is the 95 percent confidence intervals for each set of analyses for the constituent. The error analysis must take into account the following:

1) Temporal variation in the wastestream properties;

2) Uncertainties arising from sampling the waste; and

3) Uncertainties arising from the method of analysis.

Section 808.411 Significant Trace Constituents

A significant trace constituent is a constituent revealed by analysis:

a) Which is present at a mass concentration of less than 1 percent; and

b) Which has a toxicity, BiTi, as determined in Appendix B, of less than 500 mg/l.

Section 808.412 Common Names

The Agency shall utilize common names, together with a description of each, for constituents not amenable to chemical nomenclature.

BOARD NOTE: The purpose of this provision is to promote greater consistency in the naming of constituents. The Agency may use this mechanism to assign common names to constituents. Such names might include: Sand, water, wood, foodstuff, etc. In addition, this mechanism can be used to assign a name and toxicological properties to complex mixtures after these have been determined for a wastestream or a type of waste-generating process.

Section 808.413 Wastestream Description

a) The wastestream description must include the following:

1) The name of the generator, if other than the original generator identified in the application for waste classification pursuant to Section 808.402(a)(1);

2) The name of the wastestream, as assigned by the Agency pursuant to Section 808.412, or as assigned by the generator, if no name has been assigned by the Agency;

3) A general description of the activity, production process or treatment process which gives rise to the waste;

4) A general description of the physical and chemical properties of the wastestream, including its anticipated annual volume.

BOARD NOTE: This description may be summary and narrative, detailed description of physical and chemical properties of the wastestream is governed by Section 808.410.

b) The wastestream description may include a description of a range of physical and chemical properties of the wastestream, based on physical and chemical analysis pursuant to Section 808.410, that are associated with periodic, occasional or anticipated changes in the process which produces the waste (e.g., changes in materials used as coatings, bonding agents or solvents).

BOARD NOTE: The wastestream description differs from the waste analysis required pursuant to Section 808.410. The wastestream description should describe the waste which the applicant wishes to have classified, which may not be exactly what the applicant presently produces. The waste which is subjected to analysis must fit within the wastestream description, but need not be identical to all variations of it. To avoid having to necessarily repeat the waste classification process, the applicant should request classification of a broadly-defined and characterized wastestream, so as to cover any periodic, occasional or anticipated modification to the waste properties. However, this will tend to increase the degree of hazard ranking of the wastestream.

Section 808.420 Quality Assurance Plan

A quality assurance plan shall detail steps which the generator will take to ensure that the waste conforms with the wastestream description.

a) The plan must include employee orientation measures, such as the following:

1) Assignment of responsibility for assuring compliance;

2) Employee training;

3) Work rules;

4) Posting of signs; and

5) Positioning of waste receptacles.

b) The plan must include periodic and random inspection, sampling and analysis of the wastestream to ensure that it conforms with the wastestream description. The plan must be designed so that there is at least a 95 percent probability that loads meet the wastestream description. The plan may specify measures to be taken to account for variables in the properties by the wastestream, so as to prevent false negatives.

BOARD NOTE: The applicant should use statistical quality control to devise a plan with an inspection schedule which meets the above standard based on the properties and variability of the wastestream.

c) The plan may provide for inspection, sampling and analysis by the permitted facility which receives the waste. If so, the plan must include a written agreement by the receiving facility that explicitly details what actions the receiving facility will undertake to fulfill the requirements of this Section.

BOARD NOTE: The permitted facility is required by permit and 35 Ill. Adm. Code 811 to inspect, sample and analyze the wastes it receives. This is distinct from similar activities undertaken by contract on behalf of the generator pursuant to this Section.

Section 808.430 Degree of Hazard Data

a) The applicant shall submit its degree of hazard prediction, including the estimated toxic score and the information or data used to calculate the prediction, with the application.

BOARD NOTE: The applicant may include the results of a degree of hazard prediction performed by a computer program.

b) The Agency may request additional data, if necessary to assign the waste to a class and the application contains inadequate information to determine the degree of hazard of the waste.

BOARD NOTE: If the Agency requests data, the request may include a computer-generated result of an attempt to perform the degree of hazard prediction, together with a specific request for needed data.

c) Degree of hazard data shall include sufficient information to classify the waste pursuant to Section 808.245. In addition to the information normally obtained by the physical and chemical analysis required by Section 808.410, the degree of hazard data shall include, but shall not be limited to, the following with respect to each constituent:

1) Toxicity;

2) n-Octanol/water partition coefficient;

3) Persistence, measured as the half-life in days; and

4) Solubility in water, in parts per million on a weight basis.

Section 808.431 Toxicological Testing

a) Except as otherwise authorized by Section 808.245(a), the Agency shall request that the applicant perform toxicological testing of components or of the waste pursuant to Appendix B of this Part, if a toxic score determination is necessary to assign the waste to a class and there is inadequate information in the Agency's data base to determine the toxic score.

b) The applicant shall elect to include the results of toxicological testing of either the components of the waste or the waste itself.

c) Testing required under subsection (a) shall be to determine an LD_{50} - oral rat. The Agency shall approve alternative toxicological testing if the applicant demonstrates that an LD_{50} - oral rat cannot be measured or is otherwise inappropriate. The applicant shall document the relation of the alternative test to an LD_{50} - oral rat.

SUBPART E: REVIEW OF CLASSIFICATION REQUESTS

Section 808.501 Order of Requesting Information

a) If possible, the Agency shall categorize the wastestream without requesting or using degree of hazard data pursuant to Section 808.430. However, nothing herein shall preclude the Agency from requesting or using degree of hazard data to confirm the characteristics of the waste.

BOARD NOTE: For example, if the waste is a categorical waste, it should be assigned to the type for that category without resort to degree of hazard data.

b) If, after requesting and receiving degree of hazard data pursuant to Section 808.430, the Agency still cannot

determine the degree of hazard, the Agency shall request toxicological testing pursuant to Section 808.431.

Section 808.502 Completeness

a) An incomplete application is one which, together with the Agency's database, has insufficient information to classify the waste.

b) If the Agency determines that an application is incomplete, it shall classify the waste as a Class A special waste, unless the Agency determines, based on such information as is available, that the waste is a RCRA hazardous waste pursuant to 35 Ill. Adm. Code 721.

SUBPART F: WASTESTREAM CLASSIFICATION DETERMINATIONS

Section 808.520 Time for Agency Action

a) The Agency shall issue a wastestream classification determination within 60 days after the date of receipt of a complete application.

b) The applicant may waive the time for Agency action.

c) As provided in Section 22.9(e) of the Act, IF THE AGENCY DENIES A REQUEST OR FAILS TO ACT WITHIN 60 DAYS AFTER RECEIPT OF THE REQUEST, THE APPLICANT MAY SEEK REVIEW BEFORE THE BOARD PURSUANT TO SECTION 40 OF THE ACT AS IF THE AGENCY HAD DENIED AN APPLICATION FOR A PERMIT.

Section 808.521 Conditions of Wastestream Classification

The Agency shall include the following conditions in each wastestream classification determination:

a) Wastestream description.;

b) Wastestream identification number assigned to the specific determination;

c) Classification of the special waste;

d) Limitations on the management of the waste, consistent with this Part, and 35 Ill. Adm. Code 809;

e) A quality assurance plan;

f) The expiration date, if any; and

g) Such additional conditions as the Agency determines are necessary to assure that waste managed pursuant to the classification determination is of the class specified.

Section 808.522 Final Agency Action

Final Agency action shall consist of a final determination of a wastestream classification request. The Agency takes final action on the date the wastestream classification determination is mailed to the applicant.

SUBPART G: MODIFICATION, APPEAL AND ENFORCEMENT

Section 808.541 Request for Modification

If the application is a request for modification of a previous final wastestream determination, the applicant shall continue to manage waste pursuant to the old determination until it receives a final disposition of its request for a new determination.

Section 808.542 Appeal

a) Within 35 days after the Agency's final action, the applicant may appeal a wastestream classification determination to the Board. Appeals under this Section shall be subject to the requirements of 35 Ill. Adm. Code 105.

b) The record before the Board consists of the data base which was considered by the Agency at the time the Agency took final action. The applicant may supplement the record before the Board only under one or more of the following conditions:

1) If the applicant attempted to submit the information into the data base before the Agency prior to filing its appeal to the Board; or

BOARD NOTE: This provision is intended to prevent the use of appeals to challenge the validity of degree of hazard data through the introduction of new information without the Agency having the opportunity to reconsider its determination based on that new information.

2) If the data base filed by the Agency is not complete with respect to materials identified in Section 808.302(b)(3).

Section 808.543 Effect of Classification

A wastestream classification provides the generator with a determination necessary to obtain a wastestream identification number or to modify a supplemental wastestream permit. A wastestream identification number and a supplemental wastestream permit are necessary for completion of manifests and reports required by this Part and 35 Ill. Adm. Code 809 and 807. The wastestream classification authorizes the generator, hauler and permitted facility to transport and manage waste meeting the wastestream description in accordance with regulations governing the transportation and management of special waste of the class provided in the classification determination.

Section 808.544 Enforcement

Any person may bring an action pursuant to Title VIII of the Act and 35 Ill. Adm. Code 103 to seek enforcement of the provisions of this Part. Penalties may be assessed upon a finding of violation, as provided in Title XII of the Act. Sanctions may include revocation of a wastestream classification determination.

Section 808.545 Modification

a) A generator who has received a wastestream classification may request modification at any time by filing a new application. The generator shall file a new application whenever the waste it produces no longer meets the wastestream description.

b) The Agency shall modify a wastestream classification whenever necessary to reflect amendments, repeals, or additions to the Act or 35 Ill. Adm. Code: Chapter I. The Agency shall give the generator at least 30 days prior written notice before it modifies a wastestream classification.

SUBPART H: CATEGORICAL AND CHARACTERISTIC WASTES

Section 808.600 Introduction

a) This Subpart defines "categories of wastes" by the type of source or generator producing the waste, by the process from which the waste arises, or by name. This Subpart also defines categories of wastes as "characteristics wastes," based on physical or chemical properties.

b) Categorical and characteristic special (non-RCRA) wastes are assigned to a category defined under this Subpart based on the similarity of the physical, chemical or biological properties of the wastes to those properties designated as representative of that category, regardless of the degree of hazard of the individual wastes or wastestreams.

Section 808.Appendix A Assignment of Special Waste to Classes

Request to Classify Waste
(Section 808.402)

Application Incomplete?
(Section 808.502)

No Yes

Waste Categorized by Source?
(Section 808.243)

No Yes Assign to Class Based on Source (Subpart H)

Waste Categorized by Characteristics?
(Section 808.244)

No Yes Assign to Class Based on Characteristic (Subpart H)

Classify Waste According to Degree of Hazard
(by Toxic Score)
(Section 808.24)

0 1 or 2 3

Declassifiable

Special Handling Waste?
(Section 808.242)

No Yes

Declassified Class B Class A

Section 808.Appendix B Toxicity Hazard

This Appendix describes the method by which a generator of special waste or the waste source shall determine the toxic score for a waste.

a) The wastestream equivalent toxic concentration (Ceq) is calculated as follows:

Ceq = A * SUM(Ci / Bi * Ti)

where

1) SUM means the sum of the results of the calculation in parentheses for each component of the wastestream;

2) Ci is the concentration of component i as a percent of the waste by weight;

3) Ti is a measure of the toxicity of component i, as provided in subsection (h);

4) A is a constant equal to 300; and

BOARD NOTE: A is a constant used to allow the entry of percent values for Ci, and to adjust the results so that a reference material, 100 percent copper sulfate, with an oral toxicity of 300 mg/kg, achieves an equivalent toxic concentration of 100.

5) Bi is a conversion factor used to convert the toxicity of component i (Ti) to an equivalent oral toxicity. Bi is determined from subsection (i).

b) The toxic amount (M) is calculated as follows:

M = S * Ceq

where:

1) S is the maximum size of a wastestream shipment in kg/month (Such maximum size shall be specified as a condition of the wastestream classification.); and

2) Ceq is the equivalent concentration from subsection (a).

c) The toxic score is calculated as follows:

1) If the toxic amount (M) is less than 100, the toxic score is 0.

2) If the toxic amount is greater than or equal to 100 and less than 1000, the toxic score is 1.

3) If the toxic amount is greater than or equal to 1000 and less than 10,000, the toxic score is 2.

4) If the toxic amount is greater than or equal to 10,000, the toxic score is 3.

BOARD NOTE: 100 kg/month of the reference material, 100 percent copper sulfate, has a "toxic amount" of 10,000, defining the borderline between a "toxic score" of 2 or 3 for a small quantity generator.

d) The toxic score shall be used as follows:

1) If the toxic score is 0 or 3, the toxic score shall be used for the purposes of Section 808.245 without adjustment.

2) If the toxic score is 1 or 2, the toxic score shall be adjusted based on environmental fate, pursuant to subsections (e), (f) and (g).

e) The environmental fate score (F) is calculated as follows:

F = SUM(Ci * Li)

where:

1) SUM means the sum of the results of the calculation in parentheses for each component of the wastestream;

2) Ci is the concentration of component i as a percent of the waste by weight; and

3) Li is the environmental level of component i, as determined by subsection (j).

f) The toxic score is adjusted as follows:

1) If the environmental fate score (F) is less than 100, subtract 1 from the toxic score;

2) If the environmental fate score is greater than or equal to 100 and less than 200, the toxic score is not modified;

3) If the environmental fate score is greater than or equal to 200, add 1 to the toxic score.

g) Use the toxic score or adjusted toxic score calculated pursuant to subsections (b) through (f) for the purposes of Section 808.245.

h) Sources of toxicity data.

1) The generator is required to provide information to substantiate that any waste is other than a type A waste.

2) Carcinogens and mutagens. If available, use a TD50 oral rat to represent toxicity based on carcinogenicity and mutagenicity. Otherwise:

A) Carcinogens are assigned a Ti of 0.1 mg/kg; and

C) Mutagens are assigned a Ti of 0.6 mg/kg;

3) Toxicity values shall be selected according to the following criteria:

A) Toxicities are converted to equivalent oral toxicities as specified in subsection (i);

B) Toxicity values are ranked by source according to the following priorities, with the sources listed in descending order of priority:

i) First oral rat, then inhalation rat, then dermal rabbit, then aquatic toxicity; or

ii) If data from these bases is unavailable, then other mammalian toxicity values;

C) If there is more than one toxicity value for the toxicity from the highest priority available source, the lowest (most toxic) equivalent oral toxicity value is used.

i) Conversion factors for equivalent oral toxicities. The following conversion factors must be used to convert toxicity values to equivalent oral toxicities (Bi) (If a carcinogen or mutagen is assigned a value for Ti in the absence of a TD50, Bi is assigned a value of 1.):

Toxicity measure	Units	Bi
Oral - LD50	mg/kg	1.
Carcinogen/mutagen -- TD50	mg/kg	1.
Aquatic - 48 or 96 hour LC50	ppm	5.
Inhalation - LC50	mg/l	25.
Dermal - LD50	mg/kg	0.25

j) Environmental levels. If the waste constituent is innocuous, the environmental level (Li) is equal to 0. Otherwise, Li for a component is the highest level for that constituent in the following table, based on bioaccumulation, persistence and solubility (If a value is on the boundary between ranges, the higher value of Li is used.):

Bioaccumulation Min.	Bioaccumulation Max.	Persistence Min.	Persistence Max.	Solubility Min.	Solubility Max.	Li
5	---	365	---	10,000	---	3
4	5	30	365	1000	10,000	2
0	4	0	30	0	1000	1

1) "Innocuous" waste constituents are those for which BiTi, as determined pursuant to subsection (a), is greater than 5000 mg/kg.

2) Bioaccumulation is measured as the logarithm to the base 10 of the n-octanol/water partition coefficient for the waste constituent, as measured pursuant to ASTM E 1147, incorporated by reference in Section 808.111.

3) Persistence is determined pursuant to subsection (k).

4) Solubility is measured as parts per million on a weight basis. Solubility may be measured pursuant to ASTM E 1148, incorporated by reference in Section 808.111.

k) Persistence. If available, a value for persistence, measured pursuant to subsection (k)(1), must be used.

Otherwise, the table of subsection (k)(2) must be used.

1) Persistence must be measured pursuant to ASTM E 896, incorporated by reference in Section 808.111.

2) Persistence may be estimated using the following table (The longest half-life indicated must be used for constituents which fit into more than one category.):

Type of Compound or Material	Half Life (days)
Metal, metal oxide or inorganic oxide	366
Inorganic salts	366
Asbestos	366
Clay	366
Plastics or polymers	366
Pesticides	366
Halogenated hydrocarbons	366

Polyaromatic hydrocarbons and biphenyls	366
Phthalate esters	366
Paper products	366
Fats, oils and greases	366
Resins and pigments	366
Aromatic and alicyclic hydrocarbons	31
Aliphatic hydrocarbons	
More than 10 carbons	31
10 carbons or less	1
Waste constituents not otherwise listed	366

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER h: SOLID WASTE AND SPECIAL WASTE HAULING

PART 809
SPECIAL WASTE HAULING

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Appendix: Old Rule Numbers Referenced

AUTHORITY: Implementing Sections 5, 10, 13, 22 and 22.01 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1981, ch. 111 1/2, pars. 1005, 1010, 1013, 1022, and 1027).

SOURCE: Adopted as an emergency rule at 3 Ill. Reg. 13, p. 155, effective March 31, 1979; emergency amendment at 4 Ill. Reg. 34, p. 214, effective August 7, 1980 for a period of 150 days; emergency amendment at 5 Ill. Reg. 270, effective January 1, 1981 for a period of 150 days; amended at 5 Ill. Reg. 6378, effective June 12, 1981; codified at 7 Ill. Reg. 13640, effective September 30, 1983; and recodified from Subchapter h to Subchapter i at 8 Ill. Reg. 13198; amended in R89-13A at 14 Ill. Reg. 14076, effective August 15, 1990.

SUBPART A: GENERAL PROVISIONS

Section 809.101 Authority, Policy and Purposes.

Pursuant to the authority contained in Sections 5, 10, 13 and 22 of the Environmental Protection Act, and consistent with the policy and purposes expressed in Section 20 thereof, the Board adopts the following Rules and Regulations. These rules prescribe the procedures for issuance of permits to special waste haulers; for the inspection and numbering of vehicles; and for proper hauling of special wastes to approved disposal, storage and treatment sites. It is the purpose of these Regulations to control only wastes as defined herein.

Section 809.102 Severability.

If any provision of these rules or regulations is adjudged invalid, or if the application thereof to any person or in any circumstance is adjudged invalid, such invalidity shall not affect the validity of this Part as a whole or of any Subpart, Section, Subsection, Sentence or Clause thereof not adjudged invalid.

Section 809.103 Definitions

"Act" means the Illinois Environmental Protection Act.

"Agency" means the Illinois Environmental Protection Agency.

"Board" means the Illinois Pollution Control Board.

"DISPOSAL" MEANS THE DISCHARGE, DEPOSIT, INJECTION, DUMPING, SPILLING, LEAKING, OR PLACING OF ANY WASTE OR SPECIAL WASTE INTO OR ON ANY LAND OR WATER SO THAT SUCH WASTE OR SPECIAL WASTE OR ANY CONSTITUENT THEREOF MAY ENTER THE ENVIRONMENT OR BE EMITTED INTO THE AIR OR DISCHARGED INTO ANY WATERS, INCLUDING GROUNDWATERS. (Section 3.08 of the Act.) (See "Waste", "Special Waste").

"GARBAGE" MEANS THE WASTE RESULTING FROM THE HANDLING, PROCESSING, PREPARATION, COOKING, AND CONSUMPTION OF FOOD, AND WASTES FROM THE HANDLING, PROCESSING, STORAGE AND SALE OF PRODUCE. (Section 3.11 of the Act.) (See "Waste").

"HAZARDOUS WASTE" MEANS A WASTE, OR COMBINATION OF WASTES, WHICH BECAUSE OF QUANTITY, CONCENTRATION, OR PHYSICAL, CHEMICAL, OR INFECTIOUS CHARACTERISTICS MAY CAUSE OR SIGNIFICANTLY CONTRIBUTE TO AN INCREASE IN MORTALITY OR AN INCREASE IN SERIOUS, IRREVERSIBLE, OR INCAPACITATING REVERSIBLE, ILLNESS; OR POSE A SUBSTANTIAL PRESENT OR POTENTIAL THREAT TO HUMAN HEALTH OR TO THE ENVIRONMENT WHEN IMPROPERLY TREATED, STORED, TRANSPORTED OR DISPOSED OF, OR OTHERWISE MANAGED, AND WHICH HAS BEEN IDENTIFIED, BY CHARACTERISTICS OR LISTING, AS HAZARDOUS PURSUANT TO SECTION 3001 OF RESOURCE CONSERVATION AND RECOVERY ACT OF 1976 (42 U.S.C. par. 6901 et seq.) OR PURSUANT TO AGENCY GUIDELINES CONSISTENT WITH THE REQUIREMENTS OF THE ACT AND BOARD REGULATIONS. (Section 3.15 of the Act.)

"INDUSTRIAL PROCESS WASTE" MEANS ANY LIQUID, SOLID, SEMI-SOLID OR GASEOUS WASTE, GENERATED AS A DIRECT OR INDIRECT RESULT OF THE MANUFACTURE OF A PRODUCT OR THE PERFORMANCE OF A SERVICE, WHICH POSES A PRESENT OR POTENTIAL THREAT TO HUMAN HEALTH OR TO THE ENVIRONMENT OR WITH INHERENT PROPERTIES WHICH MAKE THE DISPOSAL OF SUCH WASTE IN A LANDFILL DIFFICULT TO MANAGE BY NORMAL MEANS. "INDUSTRIAL PROCESS WASTE" INCLUDES BUT IS NOT LIMITED TO SPENT PICKLING LIQUORS, CUTTING OILS, CHEMICAL CATALYSTS, DISTILLATION BOTTOMS, ETCHING ACIDS, EQUIPMENT CLEANINGS, PAINT SLUDGES, INCINERATOR ASHES, CORE SANDS, METALLIC DUST SWEEPINGS, ASBESTOS DUST, HOSPITAL PATHOLOGICAL WASTES AND OFF-SPECIFICATION, CONTAMINATED OR RECALLED WHOLESALE OR RETAIL PRODUCTS. SPECIFICALLY EXCLUDED ARE UNCONTAMINATED PACKAGING MATERIALS, UNCONTAMINATED MACHINERY COMPONENTS, GENERAL HOUSEHOLD WASTE, LANDSCAPE WASTE AND CONSTRUCTION OR DEMOLITION DEBRIS. (Section 3.17 of the Act.)

"Manifest" means the form provided or prescribed by the Agency and used for identifying name, quantity, and the origin, routing, and destination of special waste during its transportation from the point of generation to the point of disposal, treatment, or storage, as required by this Part, 35 Ill. Adm. Code: Subtitle H, or by the Resource Conservation and Recovery Act of 1976. (42 U.S.C., par. 6901 et seq.) or regulations thereunder.

"Permitted disposal site" means a sanitary landfill or other type of disposal site including but not limited to a deep well, a pit, a pond, a lagoon or an impoundment which has a current, valid operating permit issued by the Agency under Subpart B of this Part and a supplemental permit issued by the Agency under Subpart B of this Part specifically permitting the site to accept a special waste tendered for disposal.

"Permitted storage site" means any site used for the interim containment of special waste prior to disposal or treatment which has a current, valid operating permit issued by the Agency under Subpart B of this Part and a supplemental permit issued by the Agency under Subpart B of this Part, specifically permitting the site to accept a special waste tendered for storage.

"Permitted treatment site" means any site used to change the physical, chemical or biological character or composition of any special waste, including but not limited to a processing center, a reclamation facility or a recycling center which has a current, valid operating permit issued by the Agency under Subpart B of this Part and a supplemental permit issued by the Agency under Subpart B of this Part, specifically permitting the site to accept a special waste tendered for treatment.

"PERSON" MEANS ANY INDIVIDUAL, PARTNERSHIP, CO-PARTNERSHIP, FIRM, COMPANY, CORPORATION, ASSOCIATION, JOINT STOCK COMPANY, TRUST, ESTATE, POLITICAL SUBDIVISION, STATE AGENCY, OR ANY OTHER LEGAL ENTITY OR THEIR LEGAL REPRESENTATIVE, AGENT OR ASSIGNEE. (Section 3.26 of the Act.)

"POLLUTION CONTROL WASTE" MEANS ANY LIQUID, SOLID, SEMI-SOLID OR GASEOUS WASTE GENERATED AS A DIRECT OR INDIRECT RESULT OF THE REMOVAL OF CONTAMINANTS FROM THE AIR, WATER OR LAND, AND WHICH POSE A PRESENT OR POTENTIAL THREAT TO HUMAN HEALTH OR TO THE ENVIRONMENT OR WITH INHERENT PROPERTIES WHICH MAKE THE DISPOSAL OF SUCH WASTE IN A LANDFILL DIFFICULT TO MANAGE BY NORMAL MEANS. "POLLUTION CONTROL WASTE" INCLUDES BUT IS NOT LIMITED TO WATER AND WASTEWATER TREATMENT PLANT SLUDGES, BAGHOUSE DUSTS, SCRUBBER SLUDGES AND CHEMICAL SPILL CLEANINGS. (Section 3.27 of the Act.)

"Reclamation" means the recovery of material or energy from waste for commercial or industrial use.

"Refuse" means any garbage or other discarded materials, with the exception of radioactive materials discarded in accordance with the provisions of the Radiation Protection Act (Ill. Rev. Stat., 1989, ch. 111 1/2, par. 211 et seq.) and "AN ACT in relation to the concentration and storage of radioactive waste" (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 2301.1 et seq.) as now or hereafter amended. (See "Waste.")

"Septic tank pumpings" means the liquid portions and sludge residues removed from septic tanks.

"SITE" MEANS ANY LOCATION, PLACE OR TRACT OF LAND AND FACILITIES USED FOR COLLECTION, STORAGE, DISPOSAL OR TREATMENT OF SPECIAL WASTE. (Section 3.43 of the Act.)

"Solid waste" (see "Waste").

"Special waste" is as defined in 35 Ill. Adm. Code 808.110. Special waste may be either "Class A" or "Class B," pursuant to 35 Ill. Adm. Code 808.245.

"Special waste hauler" means any person who transports special waste from any location.

"Spill" means any accidental discharge of special waste.

"Storage" means the interim containment of special waste prior to disposal or treatment.

"Tank" means any bulk container placed on or carried by a vehicle to transport special waste, including wheel mounted tanks

"TREATMENT" MENAS ANY METHOD, TECHNIQUE OR PROCESS INCLUDING NEUTRALIZATION DESIGNED TO CHANGE THE PHYSICAL, CHEMICAL OR BIOLOGICAL CHARACTER OR COMPOSITION OF ANY SPECIAL WASTE SO AS TO NEUTRALIZE THAT WASTE OR SO AS TO RENDER THAT WASTE NONHAZARDOUS, SAFER FOR TRANSPORT, AMENABLE FOR RECOVERY, AMENABLE FOR STORAGE OR REDUCED IN VOLUME. "TREATMENT" INCLUDES ANY ACTIVITY OR PROCESSING DESIGNED TO CHANGE THE PHYSICAL FORM OR CHEMICAL COMPOSITION OF SPECIAL WASTE TO RENDER IT LESS DANGEROUS OR NONHAZARDOUS. "Treatment" also includes reclamation, re-use and recycling of special waste. (Section 3.49 of the Act.)

"Truck" means any unitary vehicle used to transport special waste.

"Truck tractor" means any motor vehicle used to transport special waste which is designed and used for drawing other vehicles and not so constructed as to carry a load other than a part of the weight of the vehicle and load so drawn.

"Vehicle" means any device used to transport special waste in bulk or in packages, tanks or other containers.

"WASTE" MEANS ANY GARBAGE, REFUSE, SLUDGE FROM A WASTE TREATMENT PLANT, WATER SUPPLY TREATMENT PLANT, OR AIR POLLUTION CONTROL FACILITY OR OTHER DISCARDED MATERIAL, INCLUDING SOLID, LIQUID, SEMI-SOLID, OR CONTAINED GASEOUS MATERIAL RESULTING FROM INDUSTRIAL, COMMERCIAL, MINING AND AGRICULTURAL OPERATIONS, AND FROM COMMUNITY ACTIVITIES. "WASTE" AS HERE DEFINED DOES NOT INCLUDE SOLID OR DISSOLVED MATERIAL IN DOMESTIC SEWAGE, OR SOLID OR DISSOLVED MATERIAL IN IRRIGATION RETURN FLOWS, OR IN INDUSTRIAL DISCHARGES WHICH ARE POINT SOURCES SUBJECT TO PERMITS UNDER SECTION 402 OF THE FEDERAL WATER POLLUTION CONTROL ACT, (33 U.S.C., par. 1251 et seq.); OR SOURCE, SPECIAL NUCLEAR, OR BYPRODUCT MATERIAL AS DEFINED BY THE ATOMIC ENERGY ACT OF 1954 (42 U.S.C., par. 2011 et seq.); OR RADIOACTIVE MATERIALS DISCARDED IN ACCORDANCE WITH THE PROVISIONS OF "AN ACT" in relation to personnel radiation monitoring" "Ill. Rev. Stat., 1989, ch. 111 1/2, par. 230.1 et seq.) AND AS AUTHORIZED BY REGULATIONS PROMULGATED PURSUANT TO THE RADIATION PROTECTION ACT." Ill. Rev. Stat., 1989, Ch. 111 1/2, par. 211 et seq.); AS NOW OR HEREAFTER AMENDED. "Waste" as here defined is intended to be consistent with the definition of "solid waste" set forth in Section 1004(27) of Resource Conservation and Recovery Act of 1976 (42 U.S.C., par. 6903(27)). (Section 3.53 of the Act.)

(Source: Amended in R89-13(A) at 14 Ill. Reg. 14076, effective August 15, 1990)

SUBPART B: GENERAL REQUIREMENTS FOR WASTE HAULERS

Section 809.201 Special Waste Hauling Permits - General

No person shall haul or otherwise transport any special waste generated within Illinois or any special waste to be disposed of, stored or treated within Illinois without a current, valid waste hauling permit issued by the Agency in accordance with the requirements of this Subpart unless the hauler is exempt from the special waste hauling permit requirements under this Subpart.

Section 809.202 Applications for Special Waste Hauling Permit - Contents

Applications for special waste hauling permits shall be made on application forms prescribed by the Agency which as a minimum shall require the following information:

a) Name, address, telephone number and location of the vehicle owner and operator applying for the permit.

b) A description of the service to be provided, including the number and types of vehicles and tanks to be used.

c) An agreement by the vehicle owner and that operator identified in Subsection 809.202(a) that:

1) Special waste loading, hauling and unloading will be conducted in compliance with all applicable state and federal laws and regulations.

2) All vehicles and tanks used in special waste hauling will be clean and in good repair at all times when so employed.

3) All vehicles, tanks and associated piping, valving, etc., will be constructed and maintained to prevent leakage or spillage, and shall be cleanable.

4) No waste shall be mixed with other wastes in one tank or on one vehicle if such mixture results in a hazardous combination likely to cause explosion, fire or release of a dangerous or toxic gas or in violation of any applicable state or federal law and regulation.

5) The special waste hauling equipment and procedures to be used shall be proper for the permitted service, be safe for the haulers, handlers, and others, and meet the requirements of all other applicable state and federal laws and regulations.

d) The application may require additional information deemed necessary by the Agency consistent with the requirements of the Act and Board regulations and filed with the Index Division of the Office of the Secretary of State pursuant to "Illinois Administrative Procedure Act," Ill. Rev. Stat., 1977, Ch. 127, par. 1001 et seq.

Section 809.203 Applications for Special Waste Hauling Permit - Signatures and Authorization

All special waste hauling permit applications shall be signed by the owner and operator of the vehicle; or, in the name of the owner and operator, by the owner's and operator's duly authorized agent when accompanied by evidence of authority to sign the application.

Section 809.204 Applications for Special Waste Hauling Permit - Filing and Final Action by the Agency

a) An application for special waste hauling permit shall be deemed to be filed on the date of initial receipt by the Agency of a properly completed application on the form prescribed.

b) If the Agency fails to take final action (which includes granting or denying the special waste hauling permit as requested, or by granting the special waste hauling permit with conditions) within 90 days from the filing of the completed application, the applicant may deem the special waste hauling permit granted for a period of one calendar year commencing on the 91st day after the application was filed.

c) The Agency shall send all notices of final action by U.S. Registered or Certified Mail, Return Receipt Requested. The Agency shall be deemed to have taken final action on the date that the notice of final action is mailed.

d) The Agency shall require the application to be complete and consistent with the provisions of the Act and Board regulations and may undertake such investigations and request the applicant to furnish such proof as it deems necessary to verify the information and statements made in the application. If the application is complete and the granting thereof will not cause a violation of the Act or Board regulations, the Agency shall grant the permit.

Section 809.205 Special Waste Hauling Permit Conditions

a) In granting special waste hauling permits hereunder, the Agency may impose such conditions as may be necessary to accomplish the purposes of the Act and the Board regulations.

b) The applicant may deem any conditions imposed by the Agency as a denial of the special waste hauling permit for purposes of review pursuant to Section 40 of the Act.

Section 809.206 Special Waste Hauling Permit Revision

A special waste hauling permit issued hereunder is automatically modified to include any relevant change in the Act or Board regulations. The Agency shall revise any special waste hauling permit issued by the Agency under this Part to make the permit compatible with any such relevant changes and so notify the permittee. Failure of the Agency to issue a revised permit shall not excuse the permittee from compliance with any such change.

Section 809.207 Transfer of Special Waste Hauling Permits

No special waste hauling permit is transferable from one person to another. A special waste hauling permit is personal to the persons named in the special waste hauling permit.

Section 809.208 Special Waste Hauling Permit Revocation

Violation of any special waste hauling permit conditions or failure to comply with any provisions of the Act or with any Board regulation shall be grounds for sanctions as provided in the Act, including revocation of the permit as therein provided.

Section 809.209 Permit No Defense

The existence of a special waste hauling permit under these rules shall not provide the permittee with a defense to a violation of the Act or Board regulations, except for hauling special waste without a special waste hauling permit.

Section 809.210 General Exemption from Special Hauling Permit Requirements

Any person who generates a total quantity of special waste 220 pounds (100 kilograms) or less in any calendar month for disposal, storage or treatment within Illinois is exempt from the permit requirements of this Subpart and from the manifest provisions in Subpart E of this Part. This exemption shall not constitute a defense to a violation of any provision of the Act or any applicable disposal, storage or treatment requirement of 35 Ill. Adm. Code 807.

Section 809.211 Exemptions for Special Waste Haulers

The following persons need not obtain a special waste hauling permit or carry a manifest if they haul only the waste indicated:

a) Any person licensed in accordance with the Private Sewage Disposal Licensing Act. (Ill. Rev. Stat., 1989, ch. 111 1/2, par. 116.301 et seq.) and who hauls only septic tank pumpings.

b) Any person who hauls only livestock waste intended for land application pursuant to 35 Ill. Adm. Code 560.

c) Haulers of municipal water or wastewater treatment plant sludge which is to be applied to land and which is regulated under a sludge management scheme approved by the Agency pursuant to 35 Ill. Adm. Code 309.208.

d) Any person licensed in accordance with "An Act in relation to the Disposal of Dead Animals" (Ill. Rev. Stat., 1989, ch. 8, par. 149.1 et seq.) and who hauls only grease, meat packing scraps, dead animals and parts of animals for delivery to a renderer.

e) Any person operating under rules and regulations adopted pursuant to "An Act in relation to Oil, Gas, Coal and Other Surface and Underground Resources" (Ill. Rev. Stat. 1989, ch. 96 1/2, par. 5401 et seq.) and who hauls only oil and gas extraction wastes as defined in that Act.

f) Any person who hauls only radioactive wastes as defined by the Radiation Protection Act (Ill. Rev. Stat., 1989, Ch. 111 1/2, par. 211 et seq.).

g) Any person holding a permit or certificate issued by the Illinois Commerce Commission or the Interstate Commerce Commission and who handles only shipments pursuant to a bill of lading in accordance with such Commission's regulations.

h) Any person who hauls only coal combustion fly ash.

i) Any person who hauls only declassified waste or refuse.

j) Any person who hauls only special waste exempted by 35 Ill. Adm. Code 808.123 (small quantity generators).

(Source: Amended in R89-13(A) at 14 Ill. Reg. 14076, effective August 15, 1990)

SUBPART C: DELIVERY AND ACCEPTANCE

Section 809.301 Requirements for Delivery of Special Waste to Haulers

No person shall deliver any special waste generated within Illinois or for disposal, storage or treatment within Illinois unless that person concurrently delivers a manifest completed in

accordance with Subpart E of this Part to a special waste hauler who holds a current, valid special waste hauling permit issued by the Agency under Subpart B of this Part.

Section 809.302 Requirements for Acceptance of Special Waste from Haulers

a) No person shall accept any special waste for disposal, storage or treatment within Illinois from a special waste hauler unless the special waste hauler has a valid special waste hauling permit issued by the Agency under Subpart B of this Part and concurrently presents to the receiver of the special waste, or his agent, a completed, signed manifest as required by Subpart E of this Part, which manifest designates the receiver's facility as the destination for the special waste.

b) No person shall deliver special waste in Illinois for disposal, storage or treatment unless the person who accepts the special waste has a current, valid operating permit issued by the Agency and the necessary supplemental permits required by 35 Ill. Adm. Code 807, as well as all other applicable permits as required by the Act and Board regulations.

SUBPART D: VEHICLE NUMBERS AND SYMBOLS

Section 809.401 Vehicle Numbers

Upon issuance of a special waste hauling permit, the owner and operator of any vehicle used to transport special waste except truck tractors as defined in Subpart A shall display a number issued by the Agency on opposite sides of the permitted vehicle following the words, "Licensed Special Waste Hauler: (number)." Numbers and letters shall not be less than two inches high and shall be removable only by destruction. Directly adjacent to said words and number, the vehicle owner and operator shall display a seal furnished by the Agency which shall designate the date on which the permit was issued.

Section 809.402 Special Waste Symbols

All vehicles used to transport special waste and packages used to contain special waste shall be labeled, marked and placarded in accordance with regulations adopted by the Illinois Department of Transportation or the United States Department of Transportation or the United States Environmental Protection Agency, whichever has jurisdiction. This rule is provided for informational purposes only, and does not constitute an independently enforceable regulation with respect to labeling, marking and placarding requirements.

SUBPART E: MANIFESTS, RECORDS AND REPORTING

Section 809.501 Manifests, Records, Access to Records, Reporting Requirements and Forms

a) Any person who delivers special waste to a permitted special waste hauler shall complete a manifest to accompany the special waste from delivery to the destination of the special waste. The manifest which shall be provided or prescribed by the Agency shall, as a minimum, contain the name of the generator of the special waste when and where generated; name of the person from whom delivery is accepted and the name of the site from which delivered; the name of the special waste hauler; the date of delivery; the final disposal, storage or treatment site; and the name, classification and quantity of the special waste delivered to the hauler. The Agency may provide or prescribe a different form of manifest for Class A special wastes than for Class B wastes.

b) The manifest shall consist of four parts, in contrasting colors, such that an entry or signature on one part will be directly reproduced upon all underlying parts. The top part of the manifest shall be signed by the person who delivers special waste to a special waste hauler, such signature acknowledging such delivery. The top part of the manifest shall also be signed by the special waste hauler, such signature acknowledging receipt of the special waste. The person who delivers special waste to a special waste hauler shall retain the top part of the manifest as a record. The remaining three parts of the manifest shall accompany the special waste shipment. At the destination, the second part of the manifest shall be signed by the person who accepts special waste from a special waste hauler, such signature acknowledging acceptance of the special waste.

c) A permitted site which receives special waste for disposal, storage or treatment of special waste must be designated on the manifest as the final destination point. Any subsequent delivery of the special waste or any portion or product thereof to a special waste hauler shall be conducted under a manifest initiated by the permitted disposal, storage or treatment site.

d) In all cases, the special waste hauler shall deliver the third and fourth parts of the complete, signed manifest to the person who accepts delivery of special waste from the hauler. The special waste hauler shall retain the second part of the completed, signed manifest as a record of delivery to a permitted disposal, storage or treatment site. In addition, at the end of each month, or such longer period of time approved by the Agency, the owner and the operator of the permitted disposal, storage or treatment site who accepts special waste from a special waste hauler shall send the fourth part of the completed manifest to the person who delivered the special waste to the special waste hauler.

e) Every person who delivers special waste to a special waste hauler, every person who accepts special waste from a special waste hauler and every special waste hauler shall retain their respective parts of the special waste manifest as a record of all special waste transactions. These parts shall be retained for three years and shall be made available at reasonable times for inspection and photocopying by the Agency.

BOARD NOTE: The manifest requirements of 35 Ill. Adm. Code 722, 724 and 725 relative to RCRA hazardous wastes are not affected by this subsection. Generators and receiving facilities subject to those Parts shall continue to supply copies of all manifests to the Agency.

f) Every person who delivers Class A special waste to a special waste hauler, and every person who accepts Class A special waste from a special waste hauler shall file a report, on forms prescribed or provided by the Agency, summarizing all such activity during the preceding calendar quarter. Such reports shall, at a minimum, include the information specified in subsections (h) and (i) of this Section and be mailed no later than the tenth day of the month following the end of the calendar quarter. This subsection shall be applicable to all Class A special wastes which are delivered to a special waste hauler on or after January 1, 1991.

g) Every person who delivers Class B special waste to a special waste hauler, and every person who accepts Class B special waste from a special waste hauler shall file a report, on forms prescribed or provided by the Agency, summarizing all such activity during the preceding year, ending on August 1. Such reports shall, at a minimum include the information specified in subsection (h) of this Section and shall be mailed no later than October 1, i.e., two months following the end of the preceding year. This subsection shall be applicable to all Class B special wastes which are delivered to a special waste hauler on or after January 1, 1991.

h) Every quarterly or annual report required to be filed with the Agency by a generator pursuant to subsection (f) or (g) of this Section shall include the following:

1) The IEPA identification number, name and address of the generator;

2) The period (calendar quarter or year) covered by the report;

3) The IEPA identification number, name and address for each off-site treatment, storage or disposal facility in the United States two which waste was shipped during the period;

4) The name and IEPA identification number of each transporter used during the period for shipments to a treatment, storage or disposal facility within the United States;

5) The IEPA supplemental permit identification number issued for the wastestream shipped off-site;

6) The total quantity of each wastestream shipped off-site, listed by IEPA identification number of each receiving site; and

7) A certification signed by the generator or the generator's authorized representative.

i) Every quarterly or annual report required to be filed with the Agency by a person accepting special waste from a waste hauler pursuant to subsection (f) or (g) of this Section shall include the following information:

1) The IEPA identification number, name and address of the facility;

2) The period (calendar quarter or year) covered by the report;

3) For off-site facilities, the IEPA identification number of each hazardous waste generator from which the facility received a non-hazardous special waste during the period; for imported shipments, the report must give the name and address of the foreign generator;

4) A description and the quantity of each non-hazardous special waste the facility received from off-site during the period. This information must be listed by IEPA identification number of each generator;

5) The method of treatment, storage or disposal for each non-hazardous special waste; and

6) A certification signed by the owner or operator of the facility or the owner or operator's authorized representative.

(Source: Amended in R89-3 at 14 Ill. Reg. 14076, effective August 15, 1990)

SUBPART F: DURATION OF PERMITS AND TANK NUMBERS

Section 809.601 Duration of Special Waste Hauler Permits and Tank Numbers

a) All permits and tank numbers issued hereunder shall be issued for a period not to exceed one year and are renewable.

b) Applications for renewal of a special waste hauler permit shall be made 90 days prior to the expiration date of the permit on the application forms prescribed in Section 809.202.

SUBPART G: EMERGENCY CONTINGENCIES FOR SPILLS

Section 809.701 General Provision

In order to facilitate the clean-up, transportation or safe treatment, storage or disposal of any waste generated by an accidental release of any material or special waste within Illinois which constitutes a present or potential threat to health or to the environment, the Agency may give written exception from the procedural requirements of this Part and 35 Ill. Adm. Code 807 in accordance with guidelines adopted by the Agency which are consistent with Section 3003 of the Resource Conservation and Recovery Act of 1976 (P.L. 94-580) and the Act and Board regulations. The existence of a written exception from this Agency under this Subpart shall not constitute a defense to a violation of the Act or of this Part except for those requirements specifically stated in the written exception.

SUBPART H: EFFECTIVE DATES

Section 809.801 Compliance Date

Except as otherwise provided in this Subpart, any person subject to the provisions of this Part shall comply with such provisions on and after the effective date of this Part.

Section 809.802 Exceptions

Every person subject to the provisions of Sections 809.201, 809.301, 809.302, 809.401, 809.402 and 809.501 shall comply with such rules 120 days after the effective date of this Part.

SUBPART I: HAZARDOUS (INFECTIOUS) HOSPITAL WASTE

Section 809.901 Definitions

For the purposes of this Subpart only: "Hazardous (infectious) Hospital Waste" means waste which has been generated by a hospital in connection with patient care that is contaminated with or may be contaminated with an infectious agent that has the potential of inducing an infection and which has not been rendered innocuous by sterilization or incineration. More specifically, "Hazardous (infectious) Hospital Waste" means:

a) medical and patient care items contaminated by, and human excreta produced by, persons who have been placed in strict or enteric isolation for the control and treatment of an infectious disease by the hospital's Infection Control Committee pursuant to the infection control policies and procedures required of it by Section D of Part IX of the Rules of the Illinois Department of Public Health, 5 Ill. Reg. 553 et seq. (1981), as from time to time amended, and

b) medical and patient care items that are contaminated by or have been in contact with, either the wound or skin of patients who have been placed in wound or skin isolation or strict isolation, or the mucous or other respiratory fluids of patients who have been placed in respiratory isolation or strict isolation by the hospital's Infection Control Committee pursuant to the infection control policies and procedures required of it by Section D of Part IX of the Rules of the Illinois Department of Public Health, 5 Ill. Reg. 553 et seq. (1981), as from time to time amended, and

c) medical and patient care items contaminated during surgery when the case is infectious, and

d) tissues (human or animal), pathological waste, and items that are contaminated by an infectious agent, and

e) bacteriological cultures and blood or other excreta that are products from bacteriological testing, and

f) any other waste which, because of its infectious nature, is ordered to receive special handling and disposal by the hospital's Infection Control Committee pursuant to the infection control policies and procedures required of it by Section D "Infectious Control" of Part IX of the Rules of the Illinois Department of Public Health, 5 Ill. Reg. 553 et seq. (1981), as from time to time amended.

"Hospital" means any institution, place, building, or agency, public or private, whether organized for profit or not, devoted primarily to the maintenance and operation of facilities for the diagnosis and treatment or care of two or more unrelated persons admitted for overnight stay or longer in order to obtain medical, including obstetric, psychiatric and nursing, care of illness, disease, injury, infirmity, or deformity. "Hospital" includes general and specialized hospitals, tuberculosis sanataria, mental or psychiatric hospitals and sanitaria, maternity homes, lying-in homes, and homes for unwed mothers in which care is given during delivery. "Hospital" does not include, for example, nursing homes, offices of human or animal health care providers, out-patient clinics, or veterinary hospitals.

"Incineration" means the complete reduction of a substance to ashes by means of combustion.

"Innocuous Hospital Waste" is not a special waste, but for the purposes of this Subpart means any hazardous hospital waste which has been properly sterilized or incinerated so as to render it incapable of causing infection.

"Normal Hospital Waste" is not a special waste, but for the purposes of this Subpart includes, but is not limited to, garbage, refuse, such as packaging materials removed before a product reaches patient care areas; disposable medical and patient care items such as basins and water pitchers which have not come in contact with a patient in isolation; and facial tissue and other patient contact items which have not been generated by a patient in isolation.

"Sterilization" means the complete destruction of microorganisms by moist or dry heat or by bactericidal chemical compounds.

Section 809.902 Disposal Methods

a) No person shall cause or allow hazardous (infectious) hospital waste to be deposited in any landfill.

b) Hazardous (infectious) hospital waste shall be rendered innocuous pursuant to Sections 809.903 and 809.904, or may be disposed of, where lawful, by deposit into a municipal or private sewerage system.

c) Innocuous hospital waste and normal hospital waste may be disposed of by any lawful means, including incineration in any incinerator appropriate for such waste and for which the Agency has issued a permit, by deposit in any sanitary landfill or by deposit into a municipal or private sewerage system.

Section 809.903 Rendering Innocuous by Sterilization

Any hazardous (infectious) hospital waste may be rendered an innocuous hospital waste by:

a) Sterilization of the waste in an autoclave, provided that the unit is operated in accordance with the manufacturer's recommendations and the autoclave's effectiveness is verified at least weekly with a biological spore assay containing B. stearothermophilus, or

b) Sterilization of the waste in a commercial ethylene oxide unit that provides controlled temperature and humidity conditions, provided that the unit is operated in accordance with the manufacturer's recommendations and the unit's effectiveness is verified during each use with a biological spore assay containing B. subtilis.

Section 809.904 Rendering Innocuous by Incineration

a) Any hazardous (infectious) hospital waste may be rendered an innocuous hospital waste by incineration provided that:

1) The combustion apparatus is an incinerator designed to destroy the type or class of waste introduced into it, and is operated according to the manufacturer's instructions, and

2) All permits required by 35 Ill. Adm. Code, Subtitle B (prior to codification, Chapter 2: Air Pollution) have been obtained from the Agency, and the conditions of those permits have been met.

b) The ash produced by the incineration of hazardous (infectious) hospital waste shall be disposed of as required by this Part and 35 Ill. Adm. Code 807 for disposal of any other incinerator ash.

Section 809.905 Recordkeeping Requirements for Generators

a) Generators of hazardous (infectious) hospital waste who render such waste into innocuous hospital waste shall keep and make reasonably available for Agency inspection:

1) Records of any required biological spore assay tests.

2) Records describing the approximate amount of waste sterilized or incinerated.

3) Records which demonstrate proper operation of the sterilization or incineration equipment (such as time and temperature maintenance for each load).

b) The requirements of Subsection (a) may be satisfied by maintenance of the records in the form required to be kept by any hospital licensing or accreditation body, provided that such records include information sufficient to comply with Subsection (a).

Section 809.906 Defense to Enforcement Action

Reasonable reliance on a waste generator's identification of waste as innocuous or normal hospital waste shall be a complete defense to an enforcement action against a person other than the waste generator for violation of Section 809.202(a).

TABLE 01401-1. ATMOSPHERIC HAZARD GUIDELINES

Monitoring Equipment	Hazard	Ambient Level	Action
Combustible gas indicator	Explosive atmosphere	< 5% (LEL)	Continue investigation with caution.
		5% - 10%	Continue on-site monitoring with caution as higher levels encountered.
		10% LEL	Potential explosion hazard; withdraw from area immediately.
Oxygen meter	Oxygen	<19.5%	Monitor wearing SCBA. Note: Combustible gas readings are not valid in atmospheres with <19.5% oxygen.
		19.5%-22%	Continue investigation with caution. SCBA not needed, based on oxygen content only.
		22%	Discontinue inspection; fire hazard potential. Consult specialist ist.

TABLE 01401-2. OSHA AND EPA RECORDS

	Section of 29 CFR	Period Maintained	Content
OSHA			
1. Occupational Injuries and Illnesses	1904	5 years	Information needed to complete the log (OSHA No. 200) and the supplementary record (OSHA No.101)
2. Training			
Hazardous Waste Operations26	1910.65 (e)	Current	Written certification
Lead	1926.62(1)	Annual	Hazards of lead, per 1926.59
Hazard Communication	1926.59(h)	Initial	Hazards of workplace chemicals
3. Exposure Measurements			
Hazardous Waste Operations	1926.65 (d)(ii)	30 years	Not specified
4. Medical Surveillance			
Hazardous Waste Operations;	1926.65 (f)(8)	30 years	Not specified
Lead	1926.62(n)	30 years	Medical records

1. GENERAL.

1.1 SCOPE.

This section sets forth the Contractor's responsibilities for safety and health and for emergency response during removal and disposal of soil contaminated with lead. All soil contamination work by the Contractor and any subcontractors shall be performed in compliance with the OSHA requirements contained in 29 CFR 1926.65. This specification defines the health and safety requirements required while completing the tasks described in Section 02060, Hazardous Waste Transportation and Disposal. The Contractor shall develop and implement a Site Safety and Health Plan (SSHP) as required by 29 CFR 1926.65. Upon contract award, a SSHP shall be prepared, signed by the CIH, and submitted to the CO for approval. If adequate, existing SSHP(s) governing prior work at this site may be utilized in the preparation of this SSHP. The required site-specific information for each anticipated task will be included in the submitted SSHP. AS field work progresses, modifications to the SSHP may be made through the incorporation of Phase Safety Plans additions, which shall be approved by the Contracting Officer (CO) or Contracting Officer's Representative (COR) prior to implementation. The controls, work practices, personal protective equipment (PPE), first-aid services, decontamination facilities and overall organization structures specified in this section are intended to serve as a starting point. As cleanup activities proceed, controls shall be adapted to new situations and new conditions. Changes and modifications shall be made by the Contractor's Certified Industrial Hygienist (CIH) with the concurrence of the CO or COR.

Once removal is completed, controls and procedures specified in this program for lead may be terminated when the project CIH and the CO/COR determine that remedial activities have eliminated those hazards.

The contaminated soils shall be handled and disposed of as lead contaminated soil in accordance with Federal, State and Local regulations.

1.2 REGULATORY REQUIREMENTS AND APPLICABLE PUBLICATIONS.

The following listed publications form a part of this specification and where conflicts arise between regulatory requirements, the most restrictive requirements shall be followed.

1.2.1 United States Army Corps of Engineers (USACE), EM 385-1-1, Safety and Health Requirements Manual, October 1992.

1.2.2 Federal Acquisition Regulation, F.A.R. Clause 52.236-13: Accident Prevention.

1.2.3 29 CFR 1926, Occupational Safety and Health Administration (OSHA), Safety and Health Standards for the Construction Industry, especially 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response, and 29 CFR 1926.62, Lead.

1.2.4 29 CFR 1910, OSHA, Safety and Health Standards for General Industry, especially 29 CFR 1910.134, Respiratory Protection.

1.2.5 National Institute for Occupational Safety and Health (NIOSH) Publication, Manual of Analytical Methods, 3rd Ed., Vol. 1 and 2.

1.2.6 National Fire Protection Association (NFPA), 327.

1.2.7 American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 1993-1994.

1.2.8 NIOSH/OSHA/USCG/EPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities; DHHS (NIOSH), Publication No. 85-115, October 1985.

1.3 **SUBMITTALS.**

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted:

SD-01 Data\

Site-Specific Safety and Health Plan (SSHP)\; *GA1*\. (Para. 3.3);

SD-09 Reports\

Phase-Out (Final) Report\; *FIO*\. (Para. 3.14.3).

SD-18 Records\

Safety and Health Program Certification\; *FIO*\. (Para. 3.1);

Certification of Employees Fitness\; *FIO*\. (Para. 3.5.3);

1.4 **PHYSICAL HAZARDS.**

(see Reference 1.2.1 of this section for accepted methods for dealing with physical hazards) Physical hazards to be guarded against during removal and disposal of contaminated soil include, but are not limited to:

Fire and explosion when handling fuels;

Overloaded cranes and other hoists and suspended loads;

Speeding and improperly operated vehicles;

Unguarded, improperly operated, moving equipment;

Slippery and unstable surfaces, steep grades, uneven terrain;

Hazardous substances not properly identified or contained; and in uncertain locations;

Sharp and flying objects and precariously positioned objects that may fall;

Open pits and ditches;

Noise;

Flammable materials in limited access areas;

Buried utility lines and energized overhead and underground power lines;

Improperly stored compressed air and gases; not properly secured;

Heat stress;

Cold exposure; and

Lifting heavy objects.

1.5 **ORGANIZATION STRUCTURE.**

The Contractor shall develop an organization structure as required by 29 CFR 1926.65 that sets forth lines of authority, responsibility, and communication in the organization and identifies employees who:

Enforce disciplinary action when unsafe acts or practices occur;

Grant permission for site access;

Keep safety and health records;

Prepare safety and health reports;

Select Personal Protective Equipment (PPE);

Periodically inspect PPE and ensure it is properly stored and maintained;

Control entry and exit at the Access Control Points;

Confirm an employee's suitability for work based on the physician's recommendation;

Monitor for heat and cold stress;

Monitor on-site hazards and conditions;

Sample for air contaminants;

Audit compliance with the Site Safety and Health Plan (SSHP);

Enforce the buddy system;

Enforce safety procedures;

Enforce site control;

Notify emergency response personnel in emergencies;

Set up decontamination lines, control decontamination, prepare decontamination solutions, and dispose of contaminated materials;

Train employees on emergency procedures and evacuation routes;

Provide facilities, equipment, and money for health and safety;

Maintain signs;

Serve as a liaison with public officials and medical personnel;

Dispense PPE and ensure PPE is available;

Maintain site security; and

Conduct safety meetings.

PART 2. PRODUCTS

2.1 PERSONAL PROTECTIVE EQUIPMENT.

In addition to engineering controls and work practices, PPE shall be used to protect personnel from exposure to contaminants encountered during activities on site. The Contractor shall write and include in the SSHP (see Paragraph 3.3 of this section) a PPE program for all waste site operations. The program shall state that the Contractor shall:

Provide respirators and other PPE necessary to protect the health of employees;

Provide PPE for three government personnel on a daily basis;

Establish and maintain a respiratory protection program per 29 CFR 1910.134;

Determine degree of exposure through industrial hygiene surveys and base PPE selection on this information;

Use only NIOSH/MSHA approved respirators;

Review the respirator user's medical status before work is performed;

Write standard operating procedures governing the use of respirators;

Provide annual training for respirator users and their supervisors (see also Paragraph 3.4.3: PPE USE of this section); and

Assign respirators to individual employees for their exclusive use and mark the respirator to indicate to whom it was assigned.

2.1.1 **TASK SPECIFIC PPE REQUIREMENTS.**

The Contractor is required to establish initial levels of PPE for each specific task. The Contractor is provided the following information to aid in developing a bid and in plan preparation, and is to be considered minimal requirements:

TASK	LEVEL OF PROTECTION
Mobilization/demobilization	Level D
Excavation	Level C
Sampling	Level C
Decontamination	Level C*

* Upgrades/downgrades dependant on air monitoring results.

2.1.2 **EPA LEVEL D PPE.**

The Contractor shall provide at least EPA Level D PPE for employees in the Support Zone (SZ) during all related work activities. Level D protection consists of:

Hard hat;

Boots: steel toe and shank;

Work Clothing: as defined by weather;

Safety glasses with side shields;

Hearing protectors (if required).

2.1.3 **EPA MODIFIED LEVEL D PPE.**

The contractor shall provide at least EPA Modified Level D protection for the removal and disposal of lead-contaminated soil, where no inhalation hazard exists. Modified Level D protection consists of:

Hard hat;

Boots: steel toe and shank;

Clothing: uncoated, chemically resistant coveralls;

Gloves: disposable;

Safety glasses with side shields or goggles;

Hearing protectors (if required).

2.1.4 **EPA LEVEL C PPE.**

The contractor shall provide at least EPA Level C protection during excavation of lead-contaminated soils, and whenever a threat of inhalation exposure to lead exists. EPA Level C protection for lead-contamination consists of:

Air purifying respirator with HEPA or HEPA/combination (i.e., GMC-H) cartridges.

Hard hat.

Clothing: uncoated, chemically resistant coveralls.

Gloves: disposable cotton;

Boots: steel toe and shank.

Hearing protectors (if required).

2.1.5 **SUPPORT ZONE (SZ).**

As detailed in Section 2.1.2, all personnel, including workers, visitors and the CO/COR, shall wear, as a minimum, Level D PPE in the SZ.

2.1.6 **CONFINED SPACES.**

It is not anticipated that any confined spaces will be encountered during this project. If a confined space area is determined to be present on-site that must be entered, then the appropriate atmospheric testing for oxygen, flammables and toxic contaminants shall be conducted prior to entry. All applicable requirements contained in 29 CFR 1910.146 shall be implemented, and documented in the SSHP. No entry into untested confined spaces, or atmospheres immediately dangerous to life and health, will be allowed.

2.2 **CAUTION SIGNS AND LABELS.**

(See also Paragraph 3.9.3: WORK ZONE CONTROLS of this section.) The Contractor shall post signs and attach labels as directed below. Signs and labels shall be printed in bold large letters on contrasting backgrounds. Signs shall be visible from all points where entry might occur and at such distance from the restricted area that employees may read the signs and take necessary protective steps before entering.

2.2.1 **GENERAL SITE OPERATIONS.**

Before site operations begin, mark the perimeter with steel posts connected with colored tape or other visual means. Post triangular warning flags or signs every 100 linear feet around the perimeter and at the entrance road or path that read,

HAZARDOUS AREA - KEEP OUT

and that also direct visitors to the authorized entrance.

2.2.2 **SOIL REMOVAL OPERATIONS.**

Before soil removal operations begin, mark the EZ/CRZ boundary with colored tape the same way as described above for the site perimeter. Post warning flags or signs every 100 feet and at the entrance that read,

WARNING
LEAD WORK AREA
POISON-NO SMOKING OR EATING
PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED IN THIS AREA.

2.2.3 **NO SMOKING/EATING.**

The break areas where smoking is permitted shall be marked and clearly communicated to the employees. All employees shall be required to wash their hands prior to eating or smoking, and food/tobacco/cosmetic products must be kept stored in a designated clean area within the support zone.

2.2.4 **CONFINED SPACES.**

Post warning signs around the entrance and exit of any confined spaces encountered that read:

HAZARDOUS AREA - KEEP OUT
DANGER
AUTHORIZED PERSONNEL ONLY
PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED IN THIS AREA.

2.3 **EQUIPMENT.**

The Contractor shall provide all equipment necessary to monitor for airborne contaminants and to respond to emergency situations.

2.3.1 **AIR SAMPLING AND SCREENING.**

As a minimum, the following equipment will be required to assess the quality of the air in the EZ during this work effort:

Combustible Gas Indicator with calibration gas (see Paragraph 3.6, of this section), for initial site characterization.

Oxygen Meter (see Paragraph 3.6, of this section), for initial site characterization.

Personnel Air Sampling shall be conducted daily during this project, to assess employee exposure to lead dust. The contractor shall present in the SSHP a personnel sampling plan that includes at least one employee sampled daily at each work site.

Perimeter Air monitoring shall also be conducted daily, to assess concentrations of fugitive lead emmisions created during site activities (see paragragh 3.6.3).

2.3.2 **EMERGENCY EQUIPMENT.**

As a minimum, the Contractor shall provide the following equipment for emergency use:

Portable Eyewash Station, fifteen minute duration, conforming to ANSI Z-358.1.

First Aid Kit

Self-Contained Breathing Apparati (SCBAs), as required.

Fire Extinguishers, appropriate size and rating.

Spill Control Equipment.

2.4 **SANITATION.**

2.4.1 **WASHING FACILITIES.**

The Contractor shall provide washing facilities in the SZ consisting of water, towels, and soap for men and women as necessary (see also Paragraph 3.10: DECONTAMINATION of this section).

2.4.2 **DRINKING WATER.**

The Contractor shall provide potable water in the SZ work areas and shall:

Clearly mark containers of potable water;

Ensure potable water containers are not used for any other purpose;

Keep drinking cups in sanitary receptacles;

Mark nonpotable water outlets as unsafe for drinking;

Provide receptacles if disposable cups are provided; and

Ensure there are no cross-connections between potable and nonpotable supplies.

duration of field work. The Contractor shall ensure that either the CIH or a SSHO is on the site at all times when work is being performed.

3.3.4.3 **SITE SAFETY AND HEALTH OFFICER.** A fully trained and experienced SSHO, responsible to the Contractor and the CIH, may be delegated to implement and continually enforce the safety and health program and site-specific plan elements on-site.

The SSHO shall be required to posses:

a minimum of 1 year experience in developing and implementing health and safety programs at hazardous waste sites;

demonstrated experience in construction safety techniques and procedures;

a working knowledge of Federal and state health and safety regulations;

specific training in personal and respiratory protective equipment program implementation and in the proper use of air monitoring instruments, air sampling methods, and procedures; and

formal training in occupational safety and health.

The Contractor shall submit the name of the SSHO and the SSHO's resume.

3.4 **EMPLOYEE TRAINING.**

The Contractor shall write and include in the SSHP an employee training program that includes training on hazardous waste operations, OSHA training (including specific training on lead and that information required by the Hazardous Communication Standard), PPE use, truck operation, excavating equipment operation, visitor, and follow-up training.

3.4.1 **HAZARDOUS WASTE OPERATIONS.**

The Contractor shall ensure that employees have received information and training on:

Names of employees and alternates responsible for safety and health;

Acute and chronic effects of exposure to lead, and other hazardous substances that may be present at the site or brought on-site;

Their rights and responsibilities under OSHA;

Monitoring procedures;

SSHP;

Standard operating procedures;

Engineering controls;

PPE;

Medical program;

Decontamination;

Emergencies; and

Site control measures.

3.4.2 **OSHA.**

The Contractor shall verify that employees meet the OSHA training requirements of 29 CFR 1926.65(e). OSHA requires that:

3.4.2.1 Employees who may be exposed to hazardous materials receive at least 40 hours of safety and health instruction before engaging in hazardous waste operations plus a minimum of 3 days of actual field experience under the direct supervision of a trained, experienced supervisor;

3.4.2.2 Employees who may be exposed to hazardous materials also receive 8 hours annual refresher training thereafter; and

3.4.2.3 Managers and supervisors directly responsible for, or who supervise employees at a hazardous waste site, receive at least 8 additional hours of specialized training on managing such operations.

3.4.3 **PPE USE.**

The Contractor shall ensure that employees who use PPE have received training on the following:

Fitting and adjustment;

Selection;

Problems of use including personal responses;

Inspection for defects;

Cleaning and disinfecting;

Repair;

Storage, maintenance, and disposal;

Fit testing;

Identification of respirator cartridges;

Limitations and malfunctions;

Buddy system; and

Reasons why respiratory protection is required.

3.4.4 **TRUCK OPERATION.**

The Contractor shall ensure that powered industrial truck operations are in accordance with EM 385-1-1. All truck operators who may be exposed to contamination are required to have completed the OSHA 40 hour training (see Paragraph 3.4.2 of this section).

3.4.5 **CRANE OPERATION.** Not applicable.

3.4.6 **CONFINED SPACE ENTRY.** Not Applicable.

3.4.7 **VISITORS.**

The Contractor shall ensure the CIH or the SSHO, or both, trains visitors to ensure their safety when visiting the site. The training shall familiarize visitors with hazards associated with the site, explain emergency procedures, and describe the use of PPE required during the visit. The Contractor shall also provide respirator fitting, fit testing, and training to authorized USACE personnel and visitors, as needed.

3.4.8 **FOLLOW-UP TRAINING.**

The Contractor shall ensure the CIH or the SSHO provides follow-up training at least weekly on problems observed during the previous week such as improper use of respirators or protective clothing, violation of decontamination procedures, and other discrepancies. The Contractor shall ensure the CIH or the SSHO provides special training when unanticipated problems or changes in cleanup operations occur and to new employees as needed.

3.5 **MEDICAL SURVEILLANCE.**

The Contractor shall write and include in the SSHP a medical surveillance program that includes scheduling of examinations, certification of fitness, compliance with OSHA 29 CFR 1926.65(f) and 29 CFR 1926.62(j) requirements, and information provided to the physician.

3.5.1 **SCHEDULING OF EXAMINATIONS.**

The Contractor shall make medical examinations available to employees:

Before they start work;

Annually thereafter;

On termination of employment;

If the employee develops signs or symptoms of illness relating to workplace exposures;

If the physician determines examinations need to be conducted more often than once a year; and

When an employee develops a lost time injury or illness during the period of this contract. The supervisor must be provided with a written statement signed by the physician prior to allowing the employee to return to the work site after illness resulting in a lost time workday. The written statement shall be submitted to the CO/COR.

3.5.2 **COMPLIANCE WITH OSHA.**

The Contractor shall ensure the physician performs the medical examination(s) prescribed in 29 CFR 1926.65 and 29 CFR 1926.62 for workers handling hazardous wastes (lead). To this end, the Contractor shall furnish the physician with:

Information on the employee's anticipated or measured exposure;

PPE use;

A description of the employee's duties;

A copy of 29 CFR 1926.62, and 29 CFR 1926.65;

All information required by 29 CFR 1926.62(j)(3)(iv), and

Information from previous examinations not readily available to the examining physician.

3.5.3 ***CERTIFICATION OF EMPLOYEES FITNESS***

The Contractor shall obtain a copy of the physician's written opinion about employees' ability to perform hazardous remediation work and furnish copies to the CIH, the CO/COR, and the employee before work begins. The opinion shall contain:

Verification that each site employee has received a pre-work blood lead determination;

The physician's recommended limitations upon the employee's assigned work;

The physician's opinion about increased risk to the employee's health resulting from work; and

A statement that the employee has been informed and advised about the results of the examination.

3.6 AIR SAMPLING AND SCREENING AND NOTIFICATION PROCEDURES.

The Contractor shall write and include in the SSHP an air sampling and screening program for all site operations. The program shall establish reporting requirements and notification procedures. Modifications of the programs shall have the concurrence of the CO/COR. The Contractor shall sample and screen air quality to establish:

Breathing zone (BZ) concentrations of toxic (i.e., lead) substances;

Levels of oxygen, flammable materials, and toxic substances in the atmosphere;

Concentrations of air contaminants (i.e., lead) migrating off-site.

Sampling and screening shall be under the direction of the CIH.

Air monitoring shall be performed to a) assess the degree of employee exposure to lead during remedial operations and to confirm the adequacy of the level of personal protective equipment being used, and b) to determine the adequacy of engineering controls and dust supression methods in preventing off-site migration of contaminants. Both integrated air perimeter sampling and personal sampling using the appropriate NIOSH methods (see Reference 1.2.5 of this section) shall be conducted daily during all intrusive operations.

3.6.1 SAMPLING FOR BREATHING ZONE (BZ) CONCENTRATIONS.

3.6.1.1 The Contractor shall sample for BZ concentrations of lead to establish respirator and other PPE requirements.

3.6.1.2 At least one employee, performing the anticipated highest-exposure job duty, shall be sampling daily for exposure to lead. The employee shall be sampled (integrated-TWA) with an 0.8 micron Mixed Cellulose Fiber Filter (MCEF), at standard flow rate (1.5-2.0 lpm). If initial sample results consistently reveal no employee exposures exceeding one-half the TLV/PEL, and the daily work process does not significantly differ from day to day, then daily samples may be discontinued, with the prior concurrance of the CO/COR. However, all employees engaged in intrusive activities when personnel sampling has been discontinued shall wear Level C PPE, and the level of PPE shall not be downgraded.

3.6.2 NOTIFICATION PROCEDURES FOR BZ SAMPLING RESULTS.

Following the receipt of personnel air sampling analysis, the CIH shall immediately notify the affected empoyee and the CO/COR if any exposure exceeds the lead AL of 30 ug/m3. The CIH or SSHO shall submit written reports of sampling results to the CO/COR within 3 working days of sample analysis receipt (see also Paragraph 3.14.5: SAMPLE DOCUMENTATION AND REPORTING of this section).

3.6.3 PERIMETER AND ENVIRONMENTAL SAMPLING.

The Contractor shall conduct perimeter (environmental) monitoring daily during all intrusive site activities to ensure that hazardous levels of contamination are not migrating beyond the site perimeter. At least two samples shall be collected daily; one in an upwind direction, designated background; and one in a downwind direction, designated contaminated. The difference in lead levels shall be used as an indication of the effectiveness of site dust control measures. The samples may be run as high-volume, and shall be placed near the site perimeter, and elevated approximately 4 feet above the ground to prevent contamination from dust generated by foot traffic. Daily environmental site conditions (i.e., wind force/direction, precipitation, proximity to traffic/off-site dust generation) shall be recorded.

3.7 HEAT AND COLD STRESS MONITORING.

3.7.1 HEAT STRESS MONITORING.

Due to the time of year in which this project will occur, and the type of PPE worn, it is not anticipated that heat stress will be encountered. However, if unusually mild ambient temperatures occur at the site, or the level of PPE is increased, heat stress could occur. The Contractor shall ensure the threshold limit values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) for heat stress are not exceeded for workers who wear permeable clothing, e.g., non-sealed unlined coveralls. The Contractor shall specify work/rest schedules based upon ambient temperature and direct sunlight intensity in the Contractor SSHP and institute monitoring of workers who wear inpermeable protective clothing, e.g., chemically resistant coveralls, where ambient temperatures reach or exceed 70°F. The following may be used as appropriate:

Measure heart rate (HR) by the radial pulse for 30 seconds as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute. If higher, the next work period shall be shortened by 10 minutes (or 33 percent), while the length of the rest period stays the same. If the pulse rate is 110 beats per minute at the beginning of the next rest period, the following work cycle shall be shortened by 33 percent.

Measure body temperature with a fever strip or oral thermometer as early as possible in the resting period. Oral temperature (OT) at the beginning of the rest period should not exceed 99°F. If it does, the next work period shall be shortened by 10 minutes (or 33 percent), while the length of rest period stays the same. If the OT exceeds 99.7°F, however, at the beginning of the next period, the following work cycle shall be further shortened by 33 percent. OT shall be measured again at the end of the rest period to make sure that it has dropped below 99°F.

3.7.2 **COLD STRESS MONITORING.**

Ambient temperatures at the site may cause cold stress. The contractor shall ensure that the TLVs established by the ACGIH are not exceeded for workers on the site. The contractor shall specify work/rest/warming schedules based upon ambient temperature in the SSHP and institute monitoring if required (see Reference 1.2.8 of this section).

3.8 **QUALITY ASSURANCE AND QUALITY CONTROL.**

The Contractor shall implement these controls to ensure monitoring is accurate, reliable, and representative of the worst conditions that are probable:

Monitor employees with the highest expected exposures to lead dust;

Check and calibrate all sampling equipment according to the procedures described by the manufacturer. Keep a record of each calibration;

Collect and analyze samples, sealed blanks, field blanks, and comply with the quality assurance and quality control procedures as described in the appropriate NIOSH method (see Reference 1.2.5 of this section);

Ensure air sample analyses are performed by a laboratory that is accredited under the Accreditation Program of the American Industrial Hygiene Association (AIHA).

Together with sample results, keep records on laboratory procedures, including analyses of sealed and field blanks; equipment checks and calibration; and notations on problems that may have affected the sample results.

3.9 **SITE SAFETY AND HEALTH CONTROL MEASURES.**

The Contractor shall implement feasible engineering and work practice controls to reduce and maintain employee exposure at or below the OSHA PEL (50 ug/m3) and ACGIH TLV (150 ug/m3) (the more restrictive PEL shall apply) for lead and any other hazardous substances that may be encountered.

3.9.1 **ENGINEERING CONTROLS.** The following engineering controls shall be implemented as needed:

The use of water spray as a control for dust generation. This shall be done as frequently as necessary to prevent any visible dust emissions. Perimeter sampling results will provide quantitative verification of dust suppression methods. At all times, water spray equipment and an adequate supply of water shall be available during intrusive activities.

3.9.2 **WORK PRACTICE CONTROLS.** The following work practice controls shall be implemented as needed:

Use of work schedules that minimize time spent in hazardous areas;

Use of work assignments that place employees upwind of sources of air contaminants; and

Use of work schedules that ensure no employee works in the EZ alone at any time. Each worker shall have a co-worker with whom visual contact shall be maintained at all times. The buddy system protects against an employee becoming stressed without a co-worker being aware of his or her condition. It also enables co-workers to watch out for each other while in the proximity of potential chemical and physical hazards and to observe the integrity of PPE. A Contractor employee may be used as a buddy by the USACE personnel. This arrangement will be agreed to by the Contractor Supervisor and acknowledged by the employee.

3.9.3 **WORK ZONE CONTROLS.**

The Contractor shall establish work zone controls designed to keep contamination in the smallest possible area and to prevent contamination, equipment, and property during cleanup operations. Variations in the work control program shall be with the concurrence of the CO/COR.

3.9.3.1 **Requirements.** The Contractor shall, for all zones:

Ensure employees wear the PPE needed for the zone they are in;

Ensure employees use designated access points for movement of personnel and equipment between zones and on and off the site;

Restrict site EZ/CRZ to Government-authorized or Contractor-certified personnel; and

Maintain a master list of personnel who are required to be on the site.

3.9.3.2 **Exclusion Zone (EZ).** The Contractor shall ensure these controls are used in the EZ:

Set the EZ boundary so that it encompasses areas where contaminated soil is present. The placement of the boundary depends on several factors such as the area required for excavation equipment, the amount of soil to be removed, and the area required for removal equipment. The boundaries shall be adjusted as cleanup progresses;

Mark the EZ boundaries as described in Paragraph 2.2.: CAUTION SIGNS AND LABELS, of this section.

3.9.3.3 **Contamination Reduction Zone (CRZ).** The Contractor shall ensure these controls are used in the CRZ:

Set the CRZ boundaries so the CRZ encompasses the area between the EZ and the SZ;

Direct all personnel and equipment exiting the EZ through the CRZ for decontamination.

3.9.3.4 **Support Zone (SZ).** The Contractor shall ensure these controls are used in the SZ:

Set the SZ boundaries so that the SZ covers the area outside the EZ and CRZ;

Locate toilets, lunch and break areas, and operations direction and support facilities (including supplies, equipment storage, and maintenance areas) in the SZ.

3.9.3.5 **Excavation Areas.** The Contractor shall ensure these controls are used in the excavation areas:

Fence or delineate the excavation area with a prominent visible barrier that warns of the hazard to project employees and the general public;

Keep the barrier in place until all excavation/remediation activities are completed.

3.9.4 **MATERIALS HANDLING CONTROLS.**

The Contractor shall follow the rules set forth in References 1.2.1 and 1.2.3 (of this section) for materials handling, storage, use, and disposal (See Paragraph 1.2: REGULATORY REQUIREMENTS AND APPLICABLE PUBLICATIONS of this section). The Contractor shall ensure that:

There are safe clearances for mechanical handling equipment in yards, roadways, at loading areas, and wherever turns or passages are made;

All roadways are kept in good repair and free of debris that could create a hazard;

Covers, guard rails, and markers are in place to protect personnel from open pits, ditches, and other hazards;

Employees are a safe distance from heavy equipment used to move materials and from trucks when soil is being loaded; and

Dust emissions are prevented to the highest degree possible.

3.10 DECONTAMINATION.

3.10.1 STANDARD OPERATING PROCEDURE (SOP).

The Contractor shall establish a standard operating procedure that sets forth procedures to be followed to minimize exposure to lead and the potential for contamination. The SOP shall also set forth decontamination procedures to be followed.

3.10.2 TRAINING.

The Contractor shall train employees in the SOP and enforce the procedures throughout site operations.

3.10.3 EMPLOYEES.

The Contractor shall provide decontamination stations in the SZ for removing soil-borne lead so that no employee, except under emergency situations, leaves the EZ without undergoing the following decontamination steps:

Wash boots at the water/detergent wash station at the EZ/CRZ boundaries;

Remove and leave hard hats;

Remove outer disposable clothing in the CRZ and place in a labeled 6-mil plastic bag for disposal;

Remove respirator, dispose of cartridges in contaminated trash container, wash respirator, and properly store respirator in a designated, clean location;

Wash neck, face, arms and hands.

3.10.4 TRUCKS, CONTAINERS, AND EQUIPMENT).

The Contractor shall provide a decontamination station for equipment/vehicles which come in contact with lead-contaminated soil. The necessary facilities and procedures shall be included in the required SSHP. All decontamination wastewaters shall be handled and disposed according to SECTION 2060: TRANSPORTATION AND DISPOSAL.

3.10.5 EMERGENCY.

The Contractor shall notify emergency medical personnel, ambulance crews, and hospital emergency room staff of the possibility of having to handle contaminated clothing or employees, or both, and shall advise them of appropriate decontamination measures. Notification shall be made before cleanup operations begin.

3.11 **WASTE DISPOSAL.**

The Contractor shall store and dispose of solid and liquid wastes generated during cleanup according to SECTION 2060: TRANSPORTATION AND DISPOSAL. Storage shall be as directed by the CO/COR. The wastes shall be handled, transported, and disposed in accordance with all federal, state, and local regulations.

3.12 **EMERGENCY RESPONSE.**

The Contractor shall evacuate his employees from the workplace when an emergency occurs and will not permit any of his employees to respond or assist in handling the emergency except for rescue and first aid.

3.12.1 **EMERGENCY RESPONSE PLAN.**

The Contractor shall prepare an emergency response plan according to 29 CFR 1926.65(l).

3.12.2 **EMERGENCY ALARM.**

The Contractor shall establish an emergency alarm that can be perceived above ambient noise or light levels by all employees in the affected portions of the workplace. The alarm shall be distinctive and recognizable as a signal to evacuate or to perform critical operations. The Contractor shall explain to each employee the preferred means of reporting emergencies and shall post emergency telephone numbers near telephones and other conspicuous locations when telephones are used to report emergencies.

3.13 **ACCIDENT PREVENTION**

3.13.1 **PRECONSTRUCTION CONFERENCE.**

A preconstruction conference will be scheduled prior to beginning of site work at which time representatives of the CO will review and discuss requirements relative to planning and administration of the overall safety program.

3.13.2 **ACCIDENT PREVENTION PLAN AND ACTIVITY HAZARD ANALYSIS**

The SSHP shall serve as the Accident Prevention Proposal/Plan (APP) required by USACE EM 385-1-1 and FAR clause 52.236-13. All topics listed in Table 1-1 of EM 385-1-1 shall be addressed. Prior to beginning each major phase of work, an Activity Hazard Analysis shall be prepared by the contractor for that phase. (A major phase of work is defined as an operation involving a type of work presenting hazards not experienced in previous operations or where a new subcontractor or work crew is to perform.) The analysis shall define ALL activities to be performed and identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the activity hazard analysis has been accepted by the COR and discussed with all engaged in the activities, including the contractor, subcontractor(s), and government on-site representatives. The activity hazard analyses shall be continuously reviewed and when appropriate modified to address changing site

conditions, with the concurrence of the Safety and Health Manager and the COR. All activity hazard analyses shall be attached to and become a part of the SSHP.

3.13.3 **EVACUATION TRAINING.**

The Contractor shall train certain employees to assist in a safe and orderly evacuation of all employees. The Contractor shall review the emergency action and fire prevention plans with each employee.

3.14 **RECORDKEEPING.**

The Contractor shall ensure the logs, records, and reports described below are maintained.

3.14.1 **OSHA AND EPA RECORDS.**

Required OSHA and EPA records are listed in Table 01401-2.

3.14.2. **DAILY LOG AND SAFETY INSPECTION REPORT.**

The daily log and safety inspection report shall include practices and events that affect safety and health, safety and health discrepancies encountered, and safety and health issues brought to the supervisor's attention. Each entry shall include:

Date and place;

Area (specific zone);

Number of employees in each area;

Equipment being used in each area;

Special health and safety issues notes; and

SSHO signature and date.

3.14.3 **WEEKLY REPORTS.**

The weekly report shall include these items:

A summary sheet covering the range of work being performed;

Copies of the daily health and safety inspection reports;

Results of air monitoring and screening performed during the previous week;

Copies of correspondence; and

SSHO signature and date.

3.14.4 *PHASE-OUT REPORT.*\ The phase-out, or final, report is written at the completion of work. The report shall include:

A summary of the project;

A summary of health and safety activities reported throughout the duration of the project;

Copies of the final physical and medical records and the physician's final written opinion;

Copies of all analytical reports received from laboratories;

Copies of the air monitoring field log;

Copies of all air monitoring calibration records;

Copies of all chain-of-custody records maintained for air samples; and

Copies of all raw data collection sheets used during air monitoring activities.

The phase-out report shall be reviewed and approved by the project CIH prior to submittal to the CO/COR.

3.14.5 **SAMPLE DOCUMENTATION AND REPORTING.**

The Contractor shall maintain a complete chronological record for each perimeter or personal air sample. The record shall include the documents listed below.

3.14.5.1 **Chain of Custody.** The chain of custody record documents the history of the sample from the time the identification number is signed through shipment to the laboratory and final analysis. The record shall include:

Sample identification number;

Sample location or wearer;

Date and time of sample collection;

Sample type; and

Signatures of personnel who have handled the sample.

3.14.5.2 **Calibration Record.** A calibration record form shall be filled out for each sampling pump that includes:

Air pump brand, model, and identification number;

Date and time of calibration;

Targeted calibration point;

Pre- and post-sample calibration results;

Signature of calibrator.

3.14.5.3 **Sample Data Sheet.** A sample data sheet shall be filled out for each sample and shall include:

Sample identification number;

Sample location (or worker's job title and activities);

Air pump identification number;

Pre- and post-sample calibration results;

Type of sample;

Sample date and start and stop times;

Total sample volume;

Temperature, barometric pressure, and relative humidity;

Wind conditions during sampling intervals; and

Initials of sampling personnel.

3.14.5.4 **Field Log.** A field log shall be kept for all samples collected and shall include:

Sample control number;

Date sampled;

Locations;

Sample identification number;

Type of sample;

Sampler's initials;

Date sent to analytical laboratory;

Date analytical results received from laboratory; and

Date results reported to the CO/COR.

SECTION 01402

CHEMICAL QUALITY MANAGEMENT

ATTACHMENTS: DECONTAMINATION PROTOCOL
SOIL SAMPLING PROTOCOL

PART 1. GENERAL
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- 1.2 DEFINITIONS.
- 1.3 REGULATORY REQUIREMENTS AND APPLICABLE PUBLICATIONS
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PART 2. PRODUCTS
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PART 3. EXECUTION
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- 3.6 QUALITY CONTROL SUMMARY REPORT

CHEMICAL QUALITY MANAGEMENT

PART 1. GENERAL

1.1. SCOPE.

This section sets forth the Contractor's responsibility for sample collection, handling, and analysis requirements to ensure compliance with environmental regulations during the removal of lead contaminated soil. The lead contaminated soil will be removed to a depth predetermined by EPA based upon the pre-design study performed by Woodward-Clyde Consultants. For any residence where no previous sampling was performed, soil samples shall be collected to determine the depth of excavation. The Contractor shall prepare the plans detailed in this section.

1.2. DEFINITIONS.

1.2.1. Chemical Quality Management

Chemical Quality Management (CQM) is the combination of activities establishing a Government quality assurance (QA) program and specifying quality control (QC) operations for the Contractor. CQM includes the maintenance of field and laboratory practices and checks which insure the specifications are met.

1.2.2. Quality Assurance

Quality Assurance (QA) are the Government activities required to assure desired and verifiable levels of quality in the field and the laboratory for the project. This includes of analyzing field split samples collected by the contractor and sent to the Government laboratory

1.2.3. Quality Control

Quality Control (QC) are the specific activities by the Contractor for insuring that data of required quality will be obtained. This consists of analyzing field duplicate samples and the inclusion of laboratory internal quality control procedures as required by the methods and the laboratory quality management plan.

1.2.4. Lead Contaminated Soil

Soil containing concentrations of Lead in excess of 500 ppm (previously analyzed by U.S. EPA with method 6010) in the residential areas.

1.3. REGULATORY REQUIREMENTS AND APPLICABLE PUBLICATIONS.

The references listed below form a part of this section and shall be used by the Contractor as they apply to complete the work required by this section of the specifications.

1.3.1. United States Army Corps of Engineers (USACE), Engineering Regulation 1110-1-263, Appendix E, October 1, 1990.

1.3.2. Environmental Protection Agency (EPA), Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), 3rd Edition, September 1986.

1.3.3. Woodward-Clyde Consultants (WCC), Final Report, NL/Taracorp Superfund Site, Granite City, Illinois, March 1993.

1.4. SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO designation are for information only. The following shall be submitted in accordance with Section 1300 SUBMITTAL DESCRIPTIONS:

Chemical Data Acquisition Plan\; *GA1*\. (Para 3.1)

Daily Quality Control Report\; *FIO*\. (Para 3.3)

Interim Analytical Data Reports\; *FIO*\. (Para 3.4)

Analytical Data Report\; *FIO*\. (Para 3.5)

Quality Control Summary Report\; *GA2*\. (Para 3.6)

PART 2. PRODUCTS.

2.1. EQUIPMENT.

The Contractor shall provide all equipment necessary to collect soil samples. This section describes the sampling equipment which shall be used in the field.

2.2. SOIL SAMPLING.

Stainless steel trowel
Stainless steel bowl
stainless steel spoon
Aluminum foil
Plastic sheeting
Gloves (latex)
4-oz glass wide mouth jar
Coolers
Indelible ink pen
Field log book
DQCR forms

Soil samples may also be collected from the excavation using a backhoe with a shelby tube attached to the bucket.

2.3. DECONTAMINATION.

Aluminum foil
Plastic sheeting
Gloves (latex)

Bucket or dish pan
Liquinox detergent
Methanol
Distilled water
Paper towels
Trash bags

2.4. SAMPLING PACKAGING AND SHIPMENT.

Conventional ice
Packing peanuts
Zip-lock bags
Coolers
Chain of custody forms
Custody Seals
Request for analysis forms
Tape (strapping and clear)
Indelible ink pen

PART 3. EXECUTION.

3.1. *CHEMICAL DATA ACQUISITION PLAN*\; *GA1*\

The Contractor shall be responsible for preparing the contractual details of the Chemical Data Acquisition (CDAP). The CDAP shall summarize chemical data required for remediation of the contamination. The CDAP shall be developed to assure that the chemical data collected during this project are scientifically and legally defensible. This plan also assures the Government that the Contractor understands the chemical quality management details of this specification and allows Government approval of the Contractor's implementation procedures. All details of chemical acquisition shall be presented for Government approval. The Contractor shall submit the Chemical Data Acquisition Plan (CDAP) as part of the Contractor Quality Control Plan to the Contracting Officer for review within 30 calendar days after Notice to Proceed and prior to commencement of any sampling or analysis at the site. The Contractor shall make all necessary changes as required by the Contracting Officer, until the CDAP is accepted, by written approval, by the Contracting Officer. Sampling will not be permitted until the CDAP has been approved by the Contracting Officer. The protocols to be followed shall be consistent with USEPA, State of Illinois and USACE guidelines (see Paragraphs 1.3.1 and 1.3.2, of this section). The CDAP shall include the requirements of Paragraphs 3.1.1 through 3.1.10 of this section.

3.1.1. CHEMICAL ANALYSIS REQUIREMENTS.

The Contractor shall describe the implementation procedures to meet the requirements of the specifications. This shall include the data types, quality needs and quantity needs sufficient to address the regulatory requirements and also to support decision making efforts. All off-site analyses shall be performed within 72 hours to facilitate the decision making process.

3.1.1.1. Supplemental Residential Sampling.

For the residence where no previous samples exist, (for estimating purposes assume ten percent of the residences will require this sampling approach) two borings per lot will be advanced. These borings will be sampled at the depth ranges of 0-3 inches, 3 to 6 inches, and 6 to 12 inches. Sampling of the residential soils will take place in flat open areas that have not been tilled to show a representative sample of the lead contamination in soil. Areas that are under trees or cover will not be sampled since they may indicate an unrepresentively low concentration of lead in the soil. Areas that are near stormwater discharges of impermeable areas will not be sampled because they would show a unrepresentively high concentration of lead. The six soil samples collected from each lot shall be analyzed for lead. At least one duplicated soil sample shall be collected per ten soil samples.

EPA will determine the depth of excavation after reviewing the soil sample results. To accelerate the review process, the soil samples shall have a 72 hour turn-around-time.

3.1.1.2. Special Waste Verification Sampling.

The lead contaminated soil is not anticipated to fail the TCLP regulatory criteria.

3.1.1.3. Backfill Sampling.

The Contractor shall verify the backfill source to free of contamination by collecting one sample per source (assume three sources) or one sample per 500 cubic yards of fill from one source. Each sample shall be analyzed for VOCs, Semivolatile Organic Compounds, Pesticides/PCBs (Pesticides only if source is from farmland or source is believed to contain pesticides), and Priority Pollutant Metals. No duplicate samples will be required.

3.1.1.4. Decontamination Water Sampling.

Decontamination water and any rinse waters generated during the soil excavation shall be analyzed if necessary for disposal purposes only. The Contractor shall detail these requirements in the CDAP. For estimation purposes assume two samples will be required. Assume the samples to be analyzed for RCRA Metals. No duplicate samples will be required.

3.1.2. LABORATORY APPROVAL.

The laboratory to be used by the Contractor shall be reviewed and approved by the Contracting Officer Representative (COR) prior to beginning any of the project analyses. Laboratories must also be validated by the MCX at the Missouri River Division. This process involves three separate steps; 1) laboratory documentation review, 2) analysis of site specific performance evaluation (PE) samples, and 3) an on-site audit.

3.1.3. QUALIFICATIONS OF SUPPORT STAFF.

The Contractor shall identify all staff involved for the various project components, including personnel collecting and shipping the samples. The laboratory personnel shall be reviewed as part of the laboratory certification. The Contractor shall identify the Quality Assurance Coordinator responsible for directing and ensuring that appropriate procedures including strict quality control are followed.

3.1.4. SAMPLING PROCEDURES.

The Contractor shall briefly discuss the field activities of the project. Include the sample locations, frequency, sampling procedures for the soils, preservation procedures, and all field documentation. Attached is the Corps of Engineers recommended protocol for soil sampling and decontamination.

3.1.5. SAMPLE CHAIN-OF-CUSTODY, PACKING AND TRANSPORTATION.

The Contractor shall address the procedures for sample packing, shipping and all chain of custody concerns as described in ER 1110-1-263 Appendix E. Identify the numbering scheme to be used on the labels and information regarding sample containers.

3.1.6. LABORATORY ANALYTICAL PROCEDURES.

The Contractor shall address the specific laboratory preparations and analytical methods to be employed. Utilization of approved EPA SW-846 method or other EPA methods with all method-defined internal quality control. The most current update of EPA SW-846, 3rd Edition (Update 1, Revision 1, July 1992), shall be followed. The use of non-standard methods requires prior approval by the COR.

PARAMETER	MATRIX	METHOD
VOCS	SOIL	8240
BNAs	SOIL	3550/8270
Pesticides/PCBs	SOIL	3550/8080
Priority Pollutant Metals	SOIL	3050/6010
TCLP-Pb	SOIL	1311/6010
Total Pb	SOIL	3050/6010
RCRA Metals	WATER	3005/6010

3.1.7. QUALITY CONTROL/QUALITY ASSURANCE OBJECTIVES (QC/QA).

The objectives of the QC/QA program are to ensure that the data generated are of known and acceptable quality for their intended uses. To achieve these objectives, Quality Control samples shall be collected to be analyzed by the Contractor's laboratory. Quality Assurance samples shall also be collected to be analyzed by the designated Government laboratory.

3.1.8. QUALITY CONTROL SAMPLES.

The Contractor shall be responsible for collecting samples for quality control. At a minimum, a frequency of five percent is required. For this project the only

quality control samples to be collected shall be field duplicates of soil samples. Field audit samples may also be collected if warranted.

3.1.9. QUALITY ASSURANCE SAMPLES.

The Contractor shall be responsible for collecting samples for quality assurance. At a minimum, a frequency of five percent is required. For this project the only quality assurance samples to be collected are split samples. These samples shall be splits of the quality control (duplicate) soil samples.

3.1.10. DATA ANALYSIS AND VALIDATION.

The Contractor shall be responsible for describing the data management systems which collect raw data, store data, and document quality control. The Contractor shall perform the quality control procedures as described in the reference methods. This includes reagent blanks, laboratory replicates, matrix spikes and duplicates, and surrogate standards. If acceptable windows (as outlined in SW-846 for matrix spike/surrogate recoveries are not met in the first analytical run, the laboratory shall be responsible to rerun the sample to prove matrix affects at no additional expense. The Contractor shall summarize windows of acceptability for spikes/surrogates and actions to be taken in the event of out-of-control situations in the CDAP. The CDAP shall describe in detail the laboratory QC procedures including specific compounds and their performance criteria.

Data validation procedures and organization shall be specified. The analyst who generates the analytical data has the prime responsibility for the correctness and completeness of the data. All data generated shall follow well documented in-house protocols. After the data leaves the laboratory, the contractor is responsible for review of the data. The data should be screened for contract compliance. Data validation, the systematic review of that completed data set against a specific set of criteria (data quality objectives), is performed by the contractor. Data that fails to meet the established criteria would normally be flagged.

3.2. FIELD NOTEBOOK.

A field notebook shall be maintained during all field activities. Notebook entries shall be made with indelible ink, and entries shall be as descriptive and detailed as possible, yet remain factual and objective. The beginning of each daily entry shall include the following information:

Date
Time
Weather conditions
Personnel on-site
Level of personal protection
Description and sketch of site
Signature of person making entry in notebook
Calibration records

3.3. *DAILY QUALITY CONTROL REPORT*\

During the field activities, Daily Quality Control Reports shall be prepared. These reports will include, but will not be limited to, the following list of topics:

Date (and corresponding sequential report number);

Location of the work (including installation, site, etc.);

Weather information (including temperature, wind speed and direction, humidity, precipitation, etc.);

Work performed;

Sampling performed (including specifics such as location, type of samples, log number, etc.);

Field analysis performed (including results, instrument checks, problems);

Problems encountered and corrective actions taken (including specifics regarding sampling problems and alternate sampling methods utilized);

Quality control activities;

Verbal or written instructions;

Types of tests performed, samples collected, personnel involved;

Calibration procedures and recording;

Names of all personnel on-site including title and affiliation;

Equipment used;

Health and Safety considerations;

Deviations from work plan;

General and special remarks;

General observations;

Signature and job title of the DQCR's preparer.

3.4. *INTERIM ANALYTICAL DATA REPORTS*\; *FIO*\

Due to the lead contaminated soil removal occurring in phases, the submittal of more than one analytical report may be necessary. Interim Analytical Data Reports shall be submitted on a monthly basis or after each major field remediation events, whichever is less frequent. The requirements of an Interim Analytical Data Report are the same as those detailed in Section 3.5.

3.5. *ANALYTICAL DATA REPORT*\

When all data are received from the laboratory, the Contractor shall prepare and submit to the COR a report presenting the data with respect to the quality control data received from the field samples and internal laboratory quality control. The Contractor's data for the samples must be submitted to the USACE Omaha District Project Chemist for data evaluation within 30 days of receipt of the samples. The Analytical Report shall include all sample and internal quality control results such as method blanks, spike and surrogate recoveries, and replicate analyses which shall meet or exceed the minimum data reporting requirements. The following are minimum data reporting requirements:

- Case narrative
- Quality assurance review by the Laboratory QA Officer
- Listing of analytical methods
- Cross reference list of field sample IDs and laboratory sample numbers along with the corresponding sample Ids of QA samples sent to the USACE Laboratory
- Sample results
- Field blank results (including rinsates and trip blanks) along with a list of corresponding field sample Ids
- Field QC duplicate/split sample results
- Laboratory duplicate results
- Method blanks results
- Laboratory Control Standards (when run) along with control limits for LCSs
- Dates of sampling, extraction, and analysis
- Surrogate spike concentrations and surrogate recoveries
- Matrix spike and matrix spike duplicate recoveries
- Laboratory control limits for surrogates, matrix spikes (accuracy) and matrix spike replicates (precision)
- Copies of field notes
- Copies of chains-of-custody
- Copies of cooler receipt forms
- Relative Percent Differences (RPD's) for all field duplicate, laboratory duplicate, and matrix spike duplicate pairs
- Evaluations of surrogate recoveries, precision, and accuracy.

3.6. *QUALITY CONTROL SUMMARY REPORT*\; *GA2*\

This report shall include, at a minimum, the following items:

3.6.1. A brief summary of sampling and analytical procedures, noting any deviations from procedures proposed in the CDAP.
3.6.2. A consolidation and summary of Contractor DQC reports.
3.6.3. Analytical results, including detection limits, in tabular format.
3.6.4. An outline of QC practices employed, including problems encountered and corrective actions taken.
3.6.5. Conclusions and recommendations describing the impact of analytical results on disposal of material removed from the project site.

DECONTAMINATION PROTOCOL

The decontamination area shall be established in an area of the site considered free from contamination. Equipment and personnel decontamination activities shall be centralized in this area (see also SECTION: SAFETY, HEALTH AND EMERGENCY RESPONSE). Decontamination water shall be collected in plastic containers. The decontamination water shall be allowed to evaporate from the containers. At project completion, any remaining water that has not evaporated shall be disposed of in an environmentally safe manner. Methanol rinsate shall be segregated from water rinsate and allowed to evaporate. Prior to arrival on-site, all equipment shall be steam cleaned. Equipment used for excavation and sampling shall be decontaminated prior to use in accordance with the following cleaning procedures:

1. The backhoe and all support equipment shall be free from excess grease, oils, and caked-on soils from previous work prior to arrival at the site. Equipment which leaks fuel, coolant, and lubricants shall be removed from the site and repaired prior to use.

2. Equipment or materials not used immediately after decontamination shall be placed on a plastic sheet, covered with plastic, and secured to avoid potential contamination.

3. Clean with tap water and Laboratory detergent, (Liquinox or equivalent) using a brush if necessary to remove particular matter and surface films.

4. Rinse thoroughly with potable water.

5. Rinse with pesticide-grade methanol and allow to air dry for a minimum of ten (10) minutes.

6. Rinse three times with potable water.

7. Rinse thoroughly with deionized water and allow to air dry.

8. Wrap sampling equipment completely with aluminum foil, shiny side out, to prevent contamination if equipment is to be stored or transported.

9. Equipment such as pumps, flow lines, etc. shall be flushed thoroughly with potable water prior to use.

Clean, disposable gloves shall be worn while handling sampling equipment during the final stages of decontamination. For appropriate Personal Protective Equipment (PPE) see SECTION: SAFETY, HEALTH, AND EMERGENCY RESPONSE. Pesticide grade methanol and deionized water shall be stored in glass or Teflon containers and applied via Teflon squeeze bottles.

SAMPLING PROTOCOL

Sampling personnel shall record in the field log book the preparation activities that may be pertinent to the sampling event at each location. This documentation may include information on the presence of surface staining, background vapor concentrations, depth of samples collected, sampling equipment used, and sampling personnel involved.

* The samples shall be collected with a stainless steel sampling equipment. The material shall be collected in a clean stainless steel bowl of an adequate volume to minimize spillage.

* Soil shall be packed into the sample container with a spoon in an attempt to eliminate voids in the container. Once the sample container is filled with soil, the excess soil shall be removed from the container mouth so that the lid will properly seal.

* The sample material shall be placed in 4-ounce glass containers with teflon lined lids and placed on ice.

* During sample collection, field personnel shall wear new, clean disposable gloves.

* Samples shall be labelled and shipped according to protocols listed in ER 1110-1-263.

SECTION 02050

DEMOLITION

INDEX

SECTION 02050

DEMOLITION

PART 1 GENERAL

1.1 **SUMMARY (Not Applicable)**

1.2 **REFERENCES (Not Applicable)**

1.3 **GENERAL REQUIREMENTS**

The work includes demolition of existing sidewalks/driveways damaged during excavation/backfill/compacting, and removal of resulting rubbish and debris. Rubbish and debris shall be removed daily, unless otherwise directed, to avoid accumulation at the site. Materials that cannot be removed daily shall be stored in areas specified by the Contracting Officer.

1.4 **SUBMITTALS**

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only.

The procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be removed, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations. The work plan shall also identify all off-site waste disposal facilities and include appropriate documentation.

1.5 **DUST CONTROL**

The amount of dust resulting from demolition shall be controlled to prevent the spread of dust to occupied portions of the construction site and to avoid creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding and pollution.

1.6 **PROTECTION**

1.6.1 **Protection of Existing Property**

Before beginning any demolition work, the Contractor shall carefully survey and examine each site to determine the extent of the work. The Contractor shall take all necessary precautions to avoid damage to existing items to remain in place, and any damaged items shall be repaired or replaced as approved by the Contracting Officer. The Contractor

shall carefully coordinate the work of this section with all other work and shall conduct foundation inspections of pre-existing conditions. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any heavy equipment operations adjacent to existing facilities.

1.6.2 Protection of Trees

Trees within the project site which might be damaged during demolition and which are indicated to be left in place shall be protected. Any tree designated to remain that is damaged during the work under this contract shall be replaced in kind or as approved by the Contracting Officer.

1.6.3 Environmental Protection

The work shall comply with the requirements of Section: ENVIRONMENTAL PROTECTION (in the basic contract).

1.7 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.8 USE OF EXPLOSIVES

Use of explosives will not be permitted.

1.9 AVAILABILITY OF WORK AREAS (not applicable)

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 EXISTING STRUCTURES

Sidewalks and driveways damaged during soil removal/loadout/backfill and restoration shall be removed as directed by the Contracting Officer.

3.2 UTILITIES

Existing utilities shall be removed and replaced as necessary to remove the contaminated soil and as directed by the Contracting Officer.

3.3 NOT USED

3.4 DISPOSITION OF MATERIAL

Title to materials to be demolished is vested in the Contractor upon receipt of notice to proceed.

3.4.1 Other Items

Street marker items shall be removed in a manner to prevent damage and reinstalled during the restoration.

3.4.2 Unsalvageable Materials

Unsalvageable materials shall be classified as to the type of waste in accordance with federal, state, and local regulations and segregated prior to disposal. Disposal of materials outside Government-controlled lands shall be in accordance with federal, state, and local regulations. The location of any disposal facility located outside the limit of Government-controlled lands for each type of waste shall be submitted to the Contracting Officer prior to removal from the project site. The Contractor shall submit documentation from the disposal facility to verify that it is licensed to accept the type of waste. No material shall be removed from the site without prior approval from the Contracting Officer. Concrete, masonry, and other noncombustible materials, except concrete permitted to remain in place, shall be disposed of as directed by the Contracting Officer. Combustible materials shall be disposed of off the site.

3.5 CLEAN-UP

Debris shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply.

3.6 PAVEMENTS

Existing pavements designated by the Contracting Officer for removal shall be saw cut and removed as directed.

3.7 NOT USED

SECTION 02060

HAZARDOUS WASTE TRANSPORTATION AND DISPOSAL

INDEX

SECTION 02060

HAZARDOUS WASTE
TRANSPORTATION AND DISPOSAL

PART 1. - GENERAL

1.1. SUMMARY

The Contractor responsible for the tasks defined by this specification shall furnish all labor, materials, and equipment to properly store, characterize, manifest, transport, and dispose of State of Illinois Special Waste, and potentially hazardous waste. The contractor is responsible for total management of their transportation and disposal procedures including scheduling, control, and certification of all manifest submittals.

1.2. APPLICABLE PUBLICATIONS

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. Applicable State laws and regulations shall be noted in *hazardous waste transportation and disposal*\ to the extent known.

1.2.1. Environmental Protection Agency Hazardous Waste Regulations

40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, Disposal Facilities
40 CFR 265	Generators Requirements Under Treatment, Storage and Disposal Facility Standards
40 CFR 268	Land Disposal Restrictions
40 CFR 300	National Oil and Hazardous Substance Pollution Contingency Plan
40 CFR 302	Designation, Reportable Quantities ("RQ's"), and Notification
40 CFR 355	Emergency Planning and Notification
40 CFR 403	General Pretreatment Regulations for Existing and New Sources of Pollution

IEPA Title 35, Part 808: Special Waste Classifications

1.2.2. **DOT Hazardous Materials, Substances, and Waste Regulations.**

The Contractor shall follow all applicable parts of 49 CFR 100 - 180, especially the regulations listed below.

49 CFR 171	General Information, Regulations and Information
49 CFR 172	Hazardous Materials Table & Communications, Emergency Response Information Requirements
49 CFR 173	General Requirements, Shipment/Packaging
49 CFR 177	Carriage by Public Highway
49 CFR 178	Packaging Requirements

1.3. **SUBMITTALS**
Government approval is required for submittals with a "GA" designation. The following shall be submitted:

SD-01 Data\

Hazardous Waste Transportation and Disposal\; *GA1*\

Complete Manifest Package\; *GA1*\ as required

Waste Analysis Plan\; *GA1*\ as required

Final Project Report\; *GA1*\

Prior to submittal, all items shall be checked and approved by the Contractor and each respective transmittal form (USACE Form 4025) shall be signed and dated by the Contractor certifying that the accompanying submittal complies with all the contract requirements. Proposed deviations from the contract requirements shall be clearly identified.

1.4. **WASTE CHARACTERIZATION/SPECIAL CONSIDERATIONS**

1.4.1. **Hazardous/Special Waste Disposal**
All contaminated materials at the site which are determined to be a special or hazardous waste shall be disposed of in accordance with this specification. This includes:

1.4.1.1. **Lead-Contaminated soil from approximately 260 residential housing sites.**
As a result of historical secondary lead smelting operations conducted on the NL Site, various residential areas are contaminated with lead as a result of stack emissions. It is anticipated, based on previous site investigations, that the site soils contain total lead levels greater than 500 ppm, and will yield a Toxicity Characteristic ("TCLP") analysis less than 5 mg/L. Therefore, all lead-contaminated soils with these characteristics will be treated as Illinois Special Waste, and shall be disposed of off-site at a state pre-approved RCRA subtitle

SECTION 02100

CLEARING AND GRUBBING

INDEX

SECTION 02100

CLEARING AND GRUBBING

PART I. GENERAL

1.1 REFERENCES (Not Applicable)

1.2 **DEFINITIONS**

1.2.1 **Clearing**

Clearing shall consist of the satisfactory disposal of vegetation designated for removal, including rubbish occurring in the areas to be cleared.

1.2.2 **Grubbing**

1.3 **SUBMITTALS**

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only.

SD-18 Records\

Written permission to dispose of such products shall be filed with the Contracting Officer.

1.4 **NOT USED**

1.5 **NOT USED**

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 **CLEARING**

Vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be directed to be left standing. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and excavating backfill operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work.

3.2 **GRUBBING**

Depressions made by grubbing shall be filed with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.3 **TREE REMOVAL**

3.4 **DISPOSAL OF MATERIALS**

3.4.1 **NOT USED**

1. ***Cleared and Grubbed Materials*\ (Assumes contaminated)**

Other refuse from the clearing and grubbing operations shall be disposed of in an approved contaminated waste disposal area, except when otherwise approved in writing. Disposal of materials shall be in accordance with federal, state, and local regulations. The location of any disposal facility shall be submitted to the Contracting office prior to removal from the project site. The Contractor shall submit documentation from the disposal facility to verify that it is licensed to accept the material. No material shall be removed from the project site without prior approval from the Contracting Officer.

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MANUALS, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE:	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ( ) THIS IS A NEW TRANSMITTAL ( ) THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC NO. (Cover only one section with each transmittal)	PROJECT TITLE AND LOCATION		

ITEM NO.	DESCRIPTION OF ITEM SUBMITTED *(Manufacturer, Description, number of pages, type size, model number, etc.)*	MFG OR CONTRACT, CURVE, OR MANIFEST NO. *(See instruction no. 8)*	NO. OF COPIES	CONTRACT SPEC/DRWG	NUMBER OF PAGES	FOR CONTRACTOR USE CODE	VARIATION *(See instruction No. 6)*	FOR CE USE CODE
a.	b.	c.	d.	e.	f.	g.	h.	i.
1.								
2.								
3.								
4.								

SECTION II - PROJECT CONTACTS AND PERSONNEL REVIEWING SUBMITTALS *(This section will be initiated by the USACE-OSR and Environmental Branch)*

j.	POINTS OF CONTACT: TM:	PHONE:	FAX:	ITEM NO. *(Block 4)* p.	NAME OF TSDF: q.	COMPLIANCE: (YES/NO) r.	DATE CHECKED s.
k.	PE:			1.			
l.	OSR:			2.			
m.	OTHER:			3.			
n.	IH REVIEW BY: *(Initials)* _____ DATE:	o. CHEM REVIEW BY: *(Initials)* _____ DATE:		4.			

REMARKS REVIEW COMMENTS ATTACHED? ( )YES ( )NO	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract statement of work and meet all federal, state, and local laws and regulations except as otherwise stated. _____ NAME AND SIGNATURE OF CONTRACTOR

SECTION III - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE, AND SIGNATURE OF APPROVING AUTHORITY	DATE

RAPID FOR : INSTRUCTIONS

1. ALL COPIES OF MANIFESTS FOR REVIEW SHALL HAVE THIS FORM ATTACHED AND PROPERLY FILLED OUT.

2. SUBMIT COPIES OF MANIFESTS OR WASTE PROFILE SHEETS FOR REVIEW. DO NOT SUBMIT ORIGINALS.

3. SECTION I shall be completed by the Contractor in the required number of copies specified in the delivery order.

4. All Rapid Form 4025 shall be printed legibly or typed, however, typing is not required.

5. Separate transmittal form will be used for submittals under separate transportation dates for shipment.

6. An accompanied letter by the contractor is not required.

7. DATE at the top of form will be the date submitted to the government which is to be completed by the Contractor.

8. TRANSMITTAL NO. Each new transmittal shall be numbered consecutively in the space provided for *"Transmittal No."* to include Contractor, DO#, and submittal # (i.e. ITC33-04). This number is in addition to the contract number for identifying each submittal. *Transmittal number for resubmittal will contain an alphabet letter following original transmittal number* (i.e. resubmittal of Transmittal Number ITC33-04 will be Transmittal Number ITC33-04a).

9. TO: box will contain the name and address of the office which will review the submittal. Contractor is to complete this box after reviewing the classification provided by the government in the statement of work when determining the proper address.

10. FROM: box will be the name and address of the Contractor (e.g. cooperate or regional) submitting the form. Contractor is to complete this box.

11. CONTRACT NO. box will contain the Contractors construction contract and deliver order numbers (i.e. DACXXX-XX-C-XXXX, DO# 000).

12. CHECK ONE box will be completed by the Contractor. Mark one space. If a resubmittal is provided indicate the last transmittal number.

13. SPECIFICATION SECTION NO. box will be completed by the Contractor, when applicable. The number will be the six digit number found in the specifications. No more than one section will be covered with each transmittal.

14. PROJECT TITLE AND LOCATION box will be completed by the Contractor.

15. Column a, is already completed.

16. Column b, will be completed by the Contractor. *The description of each item plus any other data necessary to describe the item.* The Contractor shall submit each submittal register item all at once on one transmittal if possible. If a submittal register item can not be submitted all at once Contractor should note that in the remarks box. If a submittal register item requires several items, description shall contain submittal register description plus any additional specific descriptions. Additional items not on the submittal register will be noted in the remarks box.

17. Column c, will be completed by the Contractor. The information will be the appropriate submittal description number or Manifest number of the item submitted.

18. Column d, will be completed by the Contractor. The number of copies will be as required by the statement of work.

19. Column e, will be completed by the Contractor. The Contractor shall state all applicable paragraph numbers.

20. Column f, will be completed by the Contractor. The Contractor shall state all applicable drawing sheet numbers.

21. Column g, will be completed by the Contractor. The action codes will be one of the following:

A - Approved as submitted.
B - Approved, except as noted.
C - Approved, except as noted. Refer to attached.
G - Other (specify).

22. Column h, will be completed by the Contractor. A check shall be placed in this column when a submittal is not in accordance with the statement of work also, a written statement to that effect shall be included in the space provided for "Remarks".

23. Column i, will be completed by the government. The action code will be one of the following:

A - Approved as submitted.
B - Approved except as noted. Resubmission is not required.
C - Approved, except as noted. Refer to attached, resubmission required.
D - Will be returned by separate correspondence.
E - Disapproved (See Attached).
Fx - Receipt acknowledged, does not comply as noted with contract requirements.
G - Other (specify).

** Section II - j through s, shall be completed by the government (e.g. USACE-OSR or Environmental Branch).

24. Column j through m, will be completed by the Government. These are the pertinent points of contact who will review the submittal.

25. Column n and o are to be filled out by the Government. The Industrial Hygienist and Chemist responsible for the review shall initial and date to verify that the review has been completed.

26. Column p through s will be filled out by the Government with the exception of Column q which will be filled out by the Contractor. This serves as the Government's check on the compliance of the proposed disposal facility identified in each manifest. The "Item No" will be the same as that in Column a.

27. REMARKS box self explained. If additional remarks are needed, indicate that a page is attached. This Column can be filled out by the contractor or Government.

28. Contractor must sign all Rapid Form 4025s to certify conformance.

29. Section III will be completed by the Government. Contractor is not to write in this space.

NOTE: Approval of items does not relieve the contractor from complying with all the requirements of the contract.

TRANSPORTATION AND DISPOSAL TRACKING FORM

1 WASTE STREAM 2 DISPOSAL FACILITY	3 - WPS a. To COE b Number c. COE Approval d To TSDF	4 - TSDF APPROVAL 5 - P.O.#	6 - MANIFEST a To COE b Number c COE Approval	7 - PICKUP a Scheduled b Actual c Acceptance	8 TSDF RECEIVED MANIFEST	9 NO. OF DAYS	10 DATE MANIFEST TO CLIENT	11 DATE EXCEPTION RPT FILED	12 - SUBTITLE D FACILITY a. Yes/No b If Yes, Date Documentation Received
	a. b. c d		a b. c	a b. c					a b
	a b c. d.		a b. c	a b. c					a b
	a. b. c. d		a. b. c.	a b. c					a b.
	a b. c d		a. b. c.	a b. c					a b
	a b. c d.		a. b. c.	a. b. c.					a b
	a. b. c. d		a b. c.	a. b. c.					a b
	a. b. c. d.		a. b. c.	a. b. c.					a b.
	a. b. c. d		a. b. c.	a b c.					a b

WPS = WASTE PROFILE SHEET | COE = CORPS OF ENGINEERS | TSDF = TRANSPORTATION & STORAGE DISPOSAL FACILITY | P.O. = PURCHASE ORDER

- OHM's base insurance contains an NPL site exclusion which states that additional rider policy or a separate policy is required for projects conducted on NPL sites that are greater than $5 million or 2 years. After consultation with our insurance broker and analysis of the off-site costs, such as imported topsoil, fill, sod, and transportation and disposal, the indication from our agent is that the project will be covered by our base policy. Therefore, we have not included additional costs for this at this time. Should the insurance broker re-access or the project grow such that the on-site/off-site analysis is no longer favorable, then the resulting insurance premium will be considered a direct project expense.

- Productivity for excavation crews is based on four (4) days to excavate, loadout and backfill with two (2) days for sod placement. Our time logic estimate is based on working sites in the same city block and not moving crews from one municipality to another.

- Other site specific advance agreements that may result from further negotiations will become an integral part of this contract upon written submission and approval by both USACE and OHM.

Site Specific Advance Agreements
NL Industries/TaraCorp Superfund Site
Granite City, Illinois

- The prices quoted herein by OHM for the soil excavation; loadout, backfill, and restoration of 70 residential sites are based upon the use of non-union labor scheduled to work 6 days per week, 10 hours per day.

- Soil removal for each residential site will be controlled by the predetermined depth provided by the USEPA from previous site investigation by Woodward-Clyde.

- In accordance with existing approved work plans under Rapid Response Delivery Order No. 58, OHM will not utilize field portable x-ray fluorescence equipment (XRF) for screening/verification since analytical data currently exists with the USEPA.

- The only sampling and analysis required for this contract is for clean backfill borrow sources and decontamination water.

- Backfill will be placed and compacted with on-site excavation equipment as currently approved. OHM will not provide specialized compaction equipment and soil compaction testing. Soil will be placed in lifts not to exceed 8-inches maximum.

- OHM will continue to provide non-screened backfill as per current delivery order.

- Site restoration will include sodding and a 30-day sod maintenance. Landscaping replacements and concrete repairs will be provided as required. Residents are responsible for mowing sod areas. Bushes and shrubs will be lump-sum settlements for each residence when required

- Per current contract, sod placement will continue year round as weather permits subcontractor to remove from sod farm.

- OHM will require unrestricted access to the work site during removal and replacement activities after right-of-way approval provided by the USEPA/IEPA/USACE.

- It is assumed structural shoring and groundwater management will not be required for this project.

- OHM will provide sanitary facilities, telephone lines, electrical facilities, and site trailers for the base operation.
- Decontamination water from each residential site will be sprayed over the special waste before shipment to the landfill, for dust control purposes.
- OHM will provide a qualified, full time site health and safety officer (HSO) for this project, as well as supplement four subcontracted health and safety officers.
- No warranties or guarantees are required under this contract.
- Excavation will be conducted using a modified Level C, (i.e., no respirator) protection with full time air monitoring.
- Only fifteen weather days have been incorporated into the estimate and preliminary schedule.
- Estimate assumes only full special waste loads (20 tons) will be shipped from each residential site. No costs have been included for short loads (less than 20 tons) and any demurrage.
- The delayed effects of the Subtitle D regulations postponed in the St. Louis area have created a very unstable market for disposal services. The deadline for the new regulations were extended until January 1994, in this area due to the extensive flooding and related cleanup in the area. Landfill closings in surrounding nonflood-affected areas are forcing more waste than anticipated into this area. Operating costs have also escalated in the facilities which have chosen to abide by the new requirements. The pricing provided for disposal of Illinois Special waste is the most current rate for this project and are subject to increase due to the current market instability and the timing of the purchase order issuance.
- OHM has checked with the Omaha SADBU regarding qualified firms that are SDB for Health and Safety Officer support in the St. Louis area. No such firms were identified.

3. Type and Results of Inspection: (Indicate whether: P-Preparatory, I-Initial, or F-Follow-up and Include Satisfactory Work Completed or Deficiencies with Action to be Taken.) _____

4. List Type and Location of Tests Performed and Results of These Tests: _____

5. Verbal Instructions Received from Government Personnel on Construction Deficiencies or Re-testing Required: _____

6. Safety Violations Observed and Actions Taken: _____

7. Remarks: _____

8. CERTIFICATION: I certify that the above report is complete and correct and that I, or my authorized representative, have inspected all work performed this day by the prime contractor and each subcontractor and have determined that all materials, equipment, and workmanship are in strict compliance with the plans and specifications, except as may be noted above.

_____
Contractor's Designated Quality Control Representative

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288 for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. *U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted.* In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted

B -- Approved, except as noted on drawings

C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached)

F -- Receipt acknowledged

FX -- Receipt acknowledged, does not comply
as noted with contract requirements

G -- Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

☆ U.S.G.P.O. 1988 [illegible]

CONSTRUCTION QUALITY CONTROL DAILY REPORT

_____

(CONTRACTOR)

REPORT NO. _____ CONTRACT NO. _____ DATE _____

LOCATION OF WORK: _____

DESCRIPTION: _____

WEATHER _____, RAINFALL _____ INCHES, TEMP.: MIN. _____ MAX. _____

1. Work Performed Today by Prime Contractor (Include Plant and Labor Breakdown): _____

2. Work Performed Today by Subcontractors (Include Plant and Labor Breakdown): _____

SUBMITTAL REGISTER

CATEGORY: 11

SPECIFICATION SECTION: Gas Piping Systems

TITLE AND LOCATION: AMMO STORAGE FACILITY, FT CARSON, CO

CONTRACTOR:

CONTRACT NUMBER:

a	b	c	d	TYPE OF SUBMITTAL	CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		e
						p	q	r	s	t	u	v	w	
		15350-2.4	Welding Procedures		X X									
		15350-2.4	Names and Identification Symbols of Qualified Welders		X X									
		15350-2.5	Operating and Maintenance Instructions		X X									

SAMPLE

IMPORTANT: THE DESCRIPTION OF EACH SUBMITTAL LISTED ABOVE SHALL BE DUPLICATED EXACTLY ON THE TRANSMITTAL FORM (ENG FORM 4025)

ENG FORM 4288, Aug 89

EDITION OF APR 84 IS OBSOLETE

PAGE ___ OF ___ PAGES

TRANSMIT	OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO	FROM	CONTRACT NO	CHECK ONE
			☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____

ITEM NO	DESCRIPTION OF ITEM SUBMITTED (Type, size, model number, etc.)	MFG. OR CONTR. CAT., CURVE, DRAWING OR BROCHURE NO (See instruction no. 8)	NO OF COPIES	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE	VARIATION (See instruction No. 6)	FOR GOVT USE CODE
				SPEC PARA NO	DRAWING SHEET NO			
a	b.	c	d	e	f	g	h	i

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

_____
NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

ENG FORM 4025 Aug 89 (ER 415-1-10) EDITION OF OCT 84 IS OBSOLETE (1 _____ (2 _____ (Proponent CECW-CT)

SECTION 02210

GRADING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1556	(1990) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2167	(1984; R 1990) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2487	(1990) Classification of Soils for Engineering Purposes
ASTM D 2922	(1991) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

1.2 NOT USED

1.3 DEFINITIONS

1.3.1 *Suitable Materials*\

Suitable materials are materials that classify according to ASTM D 2487 as GW, GP, GC, GM, SW, SC, SM, CL, CH, and ML. Lime and flyash shall also be considered as suitable materials when used as stabilizing agents.

1.3.2 Unsuitable Materials

Unsuitable materials include all materials that are not defined above as suitable materials. In addition, unsuitable materials are materials that classify according to ASTM D 2487 as MH, Pt, OH, and OL. Unsuitable materials also include all material that contains debris, refuse, roots, organic matter, frozen material, fine grained sedimentary rocks (i.e., shale, claystone, siltstone,

mudstone, and marl) even though they may be intensely weathered, contamination from hazardous, toxic, biological or radiological substances, stone having a maximum dimension larger than 3 inches in any dimension, or other materials that are determined by the Contracting Officer as unsuitable for providing a stable subgrade or stable foundation for structures. Otherwise suitable material which has excess moisture content shall not be classified as unsuitable material unless it cannot be dried by manipulation, aeration, or blending with other materials as determined by the Contracting Officer.

1.3.3 **Cohesionless and Cohesive Materials**

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

1.3.4 **NOT USED**

1.3.5 **Acceptable Topsoil**

Acceptable topsoil is defined as selectively excavated natural, friable soil that is representative of soils in the vicinity that produce heavy growths of crops, grass or other vegetation and is reasonably free from underlying subsoil, clay lumps, objectionable weeds, litter, brush, matted roots, toxic substances or any material that might be harmful to plant growth or be a hindrance to grading, planting or maintenance operations. Soil from ditch bottoms, drained ponds, eroded areas, or soil which is excessively wet or soggy is not acceptable. Topsoil shall not contain more than five percent by volume of stones, stumps or other objects larger than 1/2 inch in any dimension for sodded areas. See SECTION 02935 TURF for additional requirements.

1.3.6 **NOT USED**

1.3.7 **Pavements**

Pavements shall include all roads, walk areas, graveled parking or walk areas, or any other type of surfaced area for driving or walking.

1.3.8 **Standard Frame and Grate or Cover**

Standard frame and grate or cover shall mean heavy-duty type frame and grate or cover as a minimum.

1.4 **SUBMITTALS**

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only.

SD-08 Statements\

Field Testing Control\; *FIO*\.

Qualifications of the commercial testing laboratory who will be performing all testing in accordance with paragraph FIELD TESTING CONTROL.

SD-09 Reports\

Field Testing Control\; *FIO*\.

Suitable Materials\; *FIO*\.

Certified test reports and analysis certifying that the suitable materials proposed for use at the project site conform to the specified requirements, and for all tests conducted in accordance with paragraph FIELD TESTING CONTROL.

Disposal Facility\; *GA2*\.

Location of disposal facility and appropriate documentation.

PART 2 PRODUCTS

2.1 BORROW MATERIAL

Borrow material shall be selected to meet requirements and conditions of the particular fill for which it is to be used. Necessary clearing, grubbing, disposal of debris, and satisfactory drainage of borrow pits shall be performed by the Contractor as incidental operations to the borrow excavation.

2.1.1 Selection

Borrow materials shall be obtained from sources outside the limits of the project site, subject to approval. Borrow materials shall be subject to approval. The source of borrow material shall be the Contractor's responsibility. Unless otherwise provided in the contract, the Contractor shall obtain from the owners the right to procure material, shall pay all royalties and other charges involved, and shall bear all the expense of developing the sources, including rights-of-way for hauling.

2.1.2 Borrow Pits

Except as otherwise permitted, borrow pits shall be excavated to afford adequate drainage. Overburden and other spoil material shall be disposed of or used for special purposes. Borrow pits shall be neatly trimmed after the excavation is completed.

PART 3 EXECUTION

3.1 CONSERVATION OF TOPSOIL

Topsoil from borrow pits shall be removed to a depth of 4 inches without contamination with subsoil and stockpiled convenient to areas for later application or at locations specified. Topsoil shall be removed to full depth and shall be stored separate from other excavated materials and piled free of

roots, stones, and other undesirable materials. Any surplus of topsoil from excavations and grading shall be removed from the project site.

3.2 EXCAVATION

Excavation of every description, regardless of material encountered, within the grading limits of the project shall be performed to the lines and grades specified. Suitable excavated material shall be transported to and placed in fill areas within the limits of the work. Unsuitable material encountered within the limits of the work shall be excavated below the grade specified and replaced with suitable material as directed. Unsuitable material shall be disposed of by the Contractor outside of the limit of the project site. Disposal of materials outside the project site shall be in accordance with federal, state, and local regulations. The location of any *disposal facility*\ located outside of the limit of the project site shall be submitted to the Contracting Officer prior to removal from the project site. The Contractor shall submit documentation from the disposal facility to verify that it is licensed to accept the material. No material shall be removed from the project site without prior approval from the Contracting Officer. The Contractor shall notify the Contracting Officer if any material to be disposed of is found to contain hazardous, toxic, biological or radiological substances. During construction, excavation and filling shall be performed in a manner and sequence that will provide drainage at all times. Material required for fills shall be excavated from approved areas selected by the Contractor, and approved by the Contracting Officer as specified below.

3.3 NOT USED

3.4 NOT USED

3.5 BACKFILL ADJACENT TO STRUCTURES

Backfill adjacent to structures shall be placed and compacted uniformly in such manner as to prevent wedging action or eccentric loading upon or against the structures. Slopes bounding or within areas to be backfilled shall be stepped or serrated to prevent sliding of the fill. During backfilling operations, equipment that will overload the structure in passing over and compacting these fills shall not be used.

3.6 PREPARATION OF GROUND SURFACE FOR FILL

All vegetation, such as brush, heavy sods, heavy growth of grass, and all decayed vegetable matter, rubbish, and other unsuitable material within the area upon which fill is to be placed, shall be stripped or otherwise removed before the fill is started. In no case will unsuitable material remain in or under the fill area. Sloped ground surfaces steeper than one vertical to four horizontal on which fill is to be placed shall be plowed, stepped, or broken up, as directed, in such manner that the fill material will bond with the existing surface. Prepared surfaces on which compacted fill is to be placed shall be wetted or dried as may be required to obtain the specified moisture content and density.

3.7 FILLS

Fills shall be constructed at the locations and to lines and grades specified. The completed fill shall correspond to the shape of the existing grade and shall meet the requirements of the particular case. Suitable material removed from the borrow pits shall be used in forming the necessary fill. Where otherwise suitable material is too wet, it shall be aerated or dried to provide the moisture content specified for compaction. The material shall be placed in successive horizontal layers of 8 inches to 12 inches in loose depth for the full width and compacted. Each layer shall be compacted before the overlaying lift is placed.

3.8 COMPACTION

Compaction shall be accomplished by means specified and to the following densities for various parts of the work. Deficiencies in construction shall be corrected by the Contractor.

3.8.1 Over-all or Overlot Areas

Each layer of the fills constructed under this section except for topsoil shall be compacted to a density of at least 90% of the maximum density determined as specified hereinafter. Cohesive soils shall be at a moisture content between 1 percent below and 4 percent above optimum moisture when compacted. Cohesionless soils shall be compacted at a moisture content as required to facilitate compaction without bulking.

3.8.2 Areas to Receive Pavements

All fills for paved areas shall be compacted as specified for OVER-ALL OR OVERLOT AREAS, with the exception that the upper layer forming the subgrade for pavements shall be compacted to a density of 95% of maximum density determined as specified hereinafter.

3.8.2.1 NOT USED

3.8.2.2 NOT USED

3.9 PLACING TOPSOIL

All ground areas disturbed by construction under this contract and not built over, paved or otherwise surfaced shall be topsoiled.

3.9.1 Clearing

Prior to placing topsoil, vegetation shall be removed from the area and the ground surface cleared of all other materials that would hinder proper grading, tillage or subsequent maintenance operations.

3.9.2 Grading

Previously constructed grades shall be repaired if necessary so that the areas to be topsoiled shall conform to the existing grade upon completion of topsoil placement.

3.9.3 Tillage

Subsequent to the above grading, the areas to be topsoiled shall be thoroughly scarified by approved means to a depth of at least 3 inches for bonding of topsoil with subsoil. The work shall be performed only during periods when beneficial results are likely to be obtained. When conditions are such, by reason of drought, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the work will be stopped by the Contracting Officer and shall be resumed only when directed. Undulations or irregularities in the surface that would interfere with further construction operations or maintenance shall be leveled before the next specified operation.

3.9.4 Placing Topsoil

Topsoil shall be uniformly distributed on the designated areas and evenly spread to a minimum thickness of 4 inches. Spreading shall be performed in such manner that planting can proceed with little additional soil preparation or tillage. The surface resulting from topsoiling shall meet the finished surface requirements specified in the following paragraph: FINISHED FILLS. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to proper grading or the proposed planting.

3.10 *FIELD TESTING CONTROL*\

3.10.1 Sampling and Testing

All quality control sampling and testing shall be performed by the Contractor in accordance with SECTION: CONTRACTOR QUALITY CONTROL and as specified herein.

3.10.2 Density-Moisture Determinations

Tests for determination of maximum density and optimum moisture shall be performed by the Contractor in accordance with the requirements of ASTM D 1557, Method B, C, or D, except that a mechanical tamper may be used provided the results are correlated with those obtained with the referenced hand tamper. Samples shall be representative of the materials to be placed. An optimum moisture-density curve shall be obtained for each principal type of material or combination of materials encountered or utilized. Results of these tests shall be the basis of control for compaction. The above testing shall include Atterberg limits, grain size determinations and specific gravity. A copy of these tests shall be furnished to the Contracting Officer with the construction quality control daily report.

3.10.3 Density Control

The Contractor shall adequately control his compaction operations by tests made in accordance with any of the following methods: ASTM D 1556, ASTM D 2167, or ASTM D 2922 and ASTM D 3017 to insure placement of materials within the limits of densities specified. When ASTM D 2922 is used, the calibration curves shall be checked, and adjusted if necessary, using the sand cone method as described

in paragraph "Calibration" of ASTM D 2922. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with the density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job, on each different type of material encountered, at intervals as directed by the Contracting Officer. If ASTM D 2922 is used for field density control, there should be at least one test performed according to ASTM D 1556 per every 10 tests performed according to ASTM D 2922 for correlation of test results. One test shall be made for each 3,000 sq. yds. or less for each layer of specified depth, except areas to receive pavements, for which one test shall be made for each 1,000 sq. yds. or less for each layer. Additional tests shall be made as necessary. All test results shall be made available to the Contracting Officer. Acceptance tests may be made by the Government for verification of compliance; however, the Contractor shall not depend on such tests for his control of operations. Deficiencies in construction shall be corrected by the Contractor.

3.11 FINISHED FILLS

All areas covered by the project, including filled sections and adjacent transition areas, shall be uniformly smooth graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from either blade-grader or scraper operations, except as otherwise specified. The finished surface shall be not more than 0.15 foot above or below the established grade and shall be free of depressed areas where water would pond. The surface of embankments or excavated areas for road construction or other areas to be paved on which a pavement is to be placed shall not vary more than 0.05 foot from the established grade.

3.12 PROTECTION

During construction, fills and excavations shall be kept shaped and drained. Drains along the subgrade shall be maintained in such manner as to drain effectively at all times. Where ruts occur in the subgrade, the subgrade shall be brought to grade, reshaped if required, and recompacted prior to the placing of surfacing. The storage or stockpiling of materials on the subgrade will not be permitted. No surfacing shall be laid until the subgrade has been checked and approved, and in no case shall any surfacing be placed on a muddy subgrade or on one containing frost. Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. All work shall be conducted in accordance with the environmental protection requirements of the contract.

3.12.1 Protection of Existing Service Lines and Utilities Structures

Existing utility lines shall be protected from damage during excavation and backfilling, and if damaged, shall be repaired by the Contractor. In the event that the Contractor damages any existing utility lines that the locations of

which are not made known to the Contractor, report thereof shall be made immediately to the Contracting Officer.

3.13 ADJUSTMENT OF EXISTING STRUCTURES

All manholes, valve boxes, or inlets of any nature within the project that do not conform to the new finished grade in either surfaced or unsurfaced areas shall be adjusted to the new finished grade. Where inlets, manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, the existing frames and cover shall be removed and replaced with a heavy-duty frame and cover. The structure shall be adjusted as needed to fit the new conditions. All structures shall be of a type suitable for the intended use and shall conform to the requirements of the applicable section of these specifications.

SECTION 02220

EXCAVATION, BACKFILL, AND COMPACTING

INDEX

SECTION 02220

EXCAVATION, BACKFILL, AND COMPACTING

PART 1 GENERAL

1.1 SUMMARY (Not Applicable)

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1556	(1990) Density of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1978; R 1990) Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.45-kg) Rammer and 18-in. (457-mm) Drop
ASTM D 2167	(1984; R 1990) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2487	(1990) Classification of Soils for Engineering Purposes
ASTM D 2922	(1981; R 1990) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

CODE OF FEDERAL REGULATIONS (CFR)

CFR 40 Part 261	Identification and Listing of Hazardous Waste
CFR 40 Part 262	Standards Applicable to Generators of Hazardous Waste
CFR 40 Part 263	Standards Applicable to Transporters of Hazardous Waste
CFR 40 Part 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

CFR 40 Part 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
CFR 40 Part 266	Standards for the Management of Specific Hazardous Waste and Specific Types of Hazardous Waste Management Facilities

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA SW-846	(Nov 1986; Rev 0) Test Methods for Evaluating Solid Waste (Vol IA, IB, IC, and II)

MILITARY STANDARDS

EM 385-1-1	Corps of Engineers Safety and Health (Rev Oct 92) Requirements manual

1.3 **NOT USED**

1.4 **DEFINITIONS**

1.4.1 ***Suitable Materials***

Suitable materials are materials that are not contaminated and classify according to ASTM D 2487 as GW, GP, GC, GM, SW, SC, SM, CL, CH, and ML. Lime and flyash shall also be considered as suitable materials when used as stabilizing agents.

1.4.2 **Unsuitable Materials**

Unsuitable materials include all materials that are not defined above as suitable materials. In addition, unsuitable materials are materials that classify according to ASTM D 2487 as MH, Pt, OH, SP, and OL. Unsuitable materials also include all material that contains debris,refuse, roots, organic matter, find grained sedimentary rocks (i.e., shale, claystone, siltstone, mudstone, and marl) even though they may be intensely weathered, contamination from hazardous, toxic, biological or radiological substances, stone having a maximum dimension larger than 3 inches in any dimension, or other materials that are determined by the Contracting officer as unsuitable for providing a stable subgrade or stable foundation for structures. Otherwise suitable material which has excess moisture content shall not be classified as unsuitable material unless it cannot be dried by manipulation, aeration, or blending with other materials as determined by the Contracting Officer.

1.4.3 **Cohesionless and Cohesive Materials**

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

1.4.4 **Spot Subgrade Reinforcement Material**

Spot subgrade reinforcement material includes sound, tough, durable crushed stone, slag or gravel, consisting of pieces varying from 1 inch to 3-1/2 inches in diameter, or other approved material, with necessary filler. When a finer material is necessary for filler, broken stone chips, screened gravel, or sand may be used to completely fill all voids.

1.4.5 **Pavements**

Pavements shall include all roads, walk areas, graveled parking or walk areas, or any other type of surfaced area for driving or walking.

1.4.6 **Standard Frame and Grate or Cover**

Standard frame and grate or cover shall mean heavy-duty type frame and grate or cover as a minimum.

1.4.7 **NOT USED**

1.4.8 **Contaminated Soil Disposal**

Contaminated soil as specified in Section: Chemical Quality Management shall be disposed of off-site at a permitted facility.

1.4.9 **Excavated Contaminated Soil**

Soil containing concentrations of chemical constituents above a predetermined level which require special precautions and/or disposal methods as specified in Section: Chemical Quality for the State of Illinois action levels.

1.4.10 **Work Plan**

The Contractors comprehensive plan for the complete process of contaminated soil excavation procedures. As a minimum, the plan would include but not be limited to excavation, removal and ultimate disposal of the contaminated soils, its chemical analysis, and any other materials.

1.5 **SUBMITTALS**

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SUBMITTAL DESCRIPTIONS:

Work Plan\; *GA2*\.

The Contractor shall develop, implement, maintain, and supervise as part of the work, a comprehensive plan for contaminated soils removal and related operations. The amended Work Plan shall be submitted within 30 days after notice to proceed. No work at the site, with the exception of site inspections and mobilization, shall be performed until the existing Work Plan is amended and approved. The Contractor shall allow 15 days in the schedule for the Government's review and approval. At a minimum, the Work Plan Shall include:

a. Scheduling and operational sequencing.

b. Discussion of the approach of the contaminated soil removal.

c. A Chemical Data Acquisition Plan which describes sampling procedures and lists analysis parameters, methods, laboratory or laboratories and:

d. Soil sampling location and rationale for locations.

e. Explanation of how the analytical results will be used.

f. Identification of applicable regulatory requirements and permits.

g. Identification of waste, contaminated soil transporters and means of transportation.

h. Disposal facilities and alternate disposal facilities and means of disposal or remediation.

i. Borrow source.

j. Spill prevention plan.

k. Spill contingency plan.

l. Decontamination procedures.

SD-08 Statements\

Field Testing Control\; *FIO*\.

Qualifications of the commercial testing laboratory who will be performing all testing in accordance with paragraph FIELD TESTING CONTROL.

SD-09 Reports\

Field Testing Control\; *FIO*\.

Suitable Materials\; *FIO*\.

Certified test reports and analysis certifying that the suitable materials proposed for use at the project site conform to the specified requirements, and for all tests conducted in accordance with paragraph FIELD TESTING CONTROL.

Disposal Facility\; *GA2*\.

Location of disposal facility and appropriate documentation.

PART 2 PRODUCTS

2.1 BORROW MATERIAL

Borrow material shall be uncontaminated and shall be selected to meet requirements and conditions of the particular fill for which it is to be used. Necessary clearing, grubbing, disposal of debris, and satisfactory drainage of borrow pits shall be performed by the Contractor as incidental operations to the borrow excavation.

2.1.1 Selection

Borrow materials shall be obtained from sources outside the limits of Government-controlled land. Borrow materials shall be sampled and tested by the Contractor for possible contaminants. Samples shall be taken according to all the requirements for soil sampling and tested according to all test methods specified in the Section: Chemical Quality Management. A minimum of 3 samples shall be randomly selected from the borrow area and representative of the material proposed for borrow. After the samples are tested by approved testing facilities, test results shall be submitted to the Contracting Officer for approval. Approval must be received prior to hauling material to the project site. The source of borrow material shall be the Contractor's responsibility. Unless otherwise provided in the contract, the Contractor shall obtain from the owners the right to procure material, shall pay all royalties and other charges involved, and shall bear all the expense of developing the sources, including rights-of-way for hauling. Spot subgrade reinforcement material shall be obtained from approved sources outside the limits of Government-controlled land.

2.1.2 Borrow Pits

Except as otherwise permitted, borrow pits shall be excavated to afford adequate drainage. Overburden and other spoil material shall be disposed of or used for special purposes. Borrow pits shall be neatly trimmed after the excavation is completed.

PART 3 EXECUTION

3.1 NOT USED

3.2 EXCAVATION

The contaminated soil may be stockpiled on-site or the contaminated soil may be immediately loaded into trucks and hauled off-site to a permitted disposal facility. Excavation of every description, regardless of material encountered, within the grading limits of the project shall be performed to the lines and grades indicated including removal of existing bituminous surface course, concrete walk, and culverts. Excavation shall be performed to the depths based on the action levels in Section 1402: Chemical Quality Management, and shall not be performed below groundwater. Disposal of materials outside Government-controlled lands shall be in accordance with federal, state, and local regulations. The location of any *disposal facility*\ located outside of the limit of Government-controlled lands shall be submitted to the Contracting Officer prior to removal from the project site. The Contractor shall submit documentation from the disposal facility to verify that it is licensed to accept the material. During construction, excavation and filling shall be performed in

a manner and sequence that will provide drainage at all times. Material required for fills shall be excavated from the approved areas selected by the Contractor, and approved by the Contracting Officer as specified below.

3.3 NOT USED

3.4 NOT USED

3.5 BACKFILL ADJACENT TO STRUCTURES

Backfill adjacent to structures shall be placed and compacted uniformly in such manner as to prevent wedging action or eccentric loading upon or against the structures. Slopes bounding or within areas to be backfilled shall be stepped or serrated to prevent sliding of the fill. During backfilling operations and in the formation of embankments, equipment that will overload the structure in passing over and compacting these fills shall not be used.

3.6 NOT USED

3.7 FILLS AND EMBANKMENTS

After the contaminated soil has been excavated from the contaminated soil areas and all the required soil tests have been completed, the areas shall be backfilled and compacted to the previous elevations and grades. Where otherwise suitable material is too wet, it shall be aerated or dried to provide the moisture content specified for compaction. The material shall be placed in successive horizontal layers of 8 inches to 12 inches in loose depth for the full width of the cross section, and compacted. Each layer shall be compacted before the overlaying lift is placed.

3.8 COMPACTION

Compaction shall be accomplished by means specified and to the following densities for various parts of the work. Deficiencies in construction shall be corrected by the Contractor.

3.8.1 Over-all or Overlot Areas

Each layer of the fills and embankments, constructed under this section except for topsoil shall be compacted to a density of at least 90% of the maximum density determined as specified hereinafter. Cohesive soils shall be at a moisture content between 1 percent below and 4 percent above optimum moisture when compacted. Cohesionless soils shall be compacted at a moisture content as required to facilitate compaction without bulking.

3.8.2 Areas to Receive Pavements

All fills or embankments for paved areas shall be compacted as specified for OVER-ALL OR OVERLOT AREAS, with the exception that the upper layer forming the subgrade for pavements in both cut and fill areas, shall be compacted to a density of 95% of maximum density determined as specified hereinafter.

3.8.2.1 Subgrade Preparation

The subgrade shall be shaped to line, grade and cross section with approved compaction equipment so as to provide a minimum compacted subgrade thickness of 6 inches. This operation shall include any reshaping, aeration, wetting, or drying required to obtain a moisture content between 1 percent below and 4 percent above optimum for cohesive soils or as required to facilitate compaction without bulking for cohesionless soils along with the rolling of the subgrade to obtain proper compaction. The resulting area and all other low sections, holes, or depressions shall be brought to the required grade with suitable material and the entire subgrade shaped to line, grade and cross section and thoroughly compacted as herein provided. Subgrade compaction shall be extended to include the shoulders.

3.8.2.2 Spot Subgrade Reinforcement

The use of spot subgrade reinforcement material shall be at the direction of and subject to the approval of the Contracting Officer. Unsuitable subgrade materials shall be removed, the bottom of the resulting excavation shaped uniformly and compacted firmly to the density specified for subgrade, and the required provisions for adequate drainage shall be made. The subgrade reinforcement material shall then be placed in the prepared excavation, in layers of not more than 8 inches, which shall be spread and rammed until level with the surrounding subgrade surface. The voids shall then be filled with necessary finer selected material and the area rolled, or tamped if inaccessible to the roller. The filling and rolling or tamping shall be continued until the entire mass is thoroughly compacted to not less than the density of the surrounding or adjacent areas. The surface shall be finished to conform accurately to the grade and cross section shown on the drawings.

3.9 NOT USED

3.9.1. Clearing

Vegetation shall be removed from the area and the ground surface cleared of all other materials that would hinder proper grading, tillage or subsequent maintenance operations.

3.9.2 Grading

Refer to Section 02210: Grading.

3.9.3 NOT USED

3.9.4 NOT USED

3.10 *FIELD TESTING CONTROL*\

3.10.1 Sampling and Testing

All quality control sampling and testing shall be performed by the Contractor in accordance with SECTION: CONTRACTOR QUALITY CONTROL and as specified herein.

2.4.3 **TOILETS.**

The Contractor shall provide at least 1 toilet, and if there are more than 20 employees at least 1 toilet seat and 1 urinal per 40 workers.

2.4.4 **LUNCH AND BREAK AREA.**

The Contractor shall provide a break and lunch area in the SZ and shall ensure the area is kept sanitary (see also Paragraph 2.2.3: No Smoking/Eating).

2.5 **COMMUNICATION.**

The Contractor shall provide two-way radios, or the equivalent, to ensure communication is maintained between employees in the EZ and the SZ. Communication devices taken into the EZ and CRZ shall be placed in plastic bags or otherwise decontaminated prior to leaving the EZ.

PART 3. EXECUTION

3.1 ***SAFETY AND HEALTH PROGRAM CERTIFICATION.***

All contractors performing on-site activities at hazardous waste sites are required to develop and maintain a written Safety and Health Program in compliance with 29 CFR 1926.65(b). Written certification that such a program has been prepared and implemented shall be submitted to the CO/COR as a preface to the required SSHP (see Paragraph 3.3 of this section). The Safety and Health Program shall be made available to the CO/COR in its entirety upon request.

3.2 **WORK PLAN.**

The Contractor shall develop and implement a Work Plan as required by 29 CFR 1926.65(b)(3) based on a review of background information. All phases of the work shall be included in the plan (i.e. soil sampling, soil removal, decontamination, etc.).

3.3 ***SITE-SPECIFIC SAFETY AND HEALTH PLAN (SSHP).***

The Contractor shall write, implement, and enforce a Site-Specific Safety and Health Plan (SSHP) as required by 29 CFR 1926.65(b)(4) that includes the requirements of Paragraphs 3.4 thru 3.13 of this section. The purpose of the SSHP is to ensure the safety of and to provide protection against damage, injury, and loss to personnel, material, equipment, and property on and around the work site. The SSHP shall be signed and dated by the Contractor's CIH prior to submittal.

3.3.1 **ENFORCEMENT.**

The Contractor's CIH or Site Safety and Health Officer (SSHO) shall have responsibility for implementing and enforcing the SSHP on the site.

3.3.2 **DISTRIBUTION AND NOTIFICATION.**

The Contractor shall provide a copy of the SSHP to subcontractors or their representatives who participate in the cleanup. If a subcontractor is responsible for correcting a hazard, OSHA holds that contractor liable. There may, however, be additional liability issues outside the purview of OSHA (see also Paragraph 3.3.3: LIABILITY of this section). The Contractor shall require employees at the site to read the SSHP and to sign a form stating that they have read it and understand it.

3.3.3 **LIABILITY.**

The contractor shall notify the CO/COR when the work may affect adjacent properties or present unacceptable health or safety risks. All damage, injury, or loss to any property caused by the work shall be remedied by the Contractor at no additional cost to the Government.

3.3.4 **KEY SAFETY PERSONNEL.**

The Contractor shall submit information on key safety and health personnel along with the SSHP.

3.3.4.1 **OCCUPATIONAL HEALTH PHYSICIAN.** The Contractor shall employ a Board-certified (or who by necessary training and experience is Board eligible) occupational health physician with knowledge or experience, or both, in the hazards associated with the project. The physician shall provide medical examinations and surveillance for employees. The Contractor shall submit the name of the physician along with a certified letter stating that the physician has been briefed on the site conditions and is aware of the hazards involved.

3.3.4.2 **CERTIFIED INDUSTRIAL HYGIENIST.** The Contractor shall employ a CIH with knowledge or experience, or both, in state and federal occupational safety and health regulations to establish controls, work practices, and PPE as needed. The CIH will have the primary responsibility for implementation, oversight, and enforcement of the health and safety aspects of this remedial action.

The CIH shall be required to:

possess a minimum of 2 years experience in developing and implementing health and safety programs at hazardous waste sites or in the chemical industry;

have demonstrable experience in supervising professional and technician level personnel; and

have demonstrable experience in developing worker exposure assessment programs and ambient air monitoring programs for hazardous materials.

The Contractor shall submit the name of the CIH, the CIH's resume, and proof of certification. It will not be necessary for the CIH to be on-site for the entire

3.10.2 Density-Moisture Determinations

Tests for determination of maximum density and optimum moisture shall be performed by the Contractor in accordance with the requirements of ASTM D 1557, Method B, C, or D, except that a mechanical tamper may be used provided the results are correlated with those obtained with the referenced hand tamper. Samples shall be representative of the materials to be placed. An optimum moisture-density curve shall be obtained for each principal type of material or combination of materials encountered or utilized. Results of these tests shall be the basis of control for compaction. The above testing shall include Atterberg limits, grain size determinations and specific gravity. A copy of these tests shall be furnished to the Contracting Officer with the construction quality control daily report.

3.10.3 Density Control

The Contractor shall adequately control his compaction operations by tests made in accordance with any of the following methods: ASTM D 1556, ASTM D 2167, or ASTM D 2922 and ASTM D 3017 to insure placement of materials within the limits of densities specified. The Contractor shall obtain a service permit to use radiation-producing machinery or radioactive materials in accordance with SECTION 01400: SPECIAL SAFETY REQUIREMENTS. When ASTM D 2922 is used, the calibration curves shall be checked, and adjusted if necessary, using the sand cone method as described in paragraph, "Calibration" of ASTM D 2922. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with the density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job, on each different type of material encountered, at intervals as directed by the Contracting Officer. If ASTM D 2922 is used for field density control, there should be at least one test performed according to ASTM D 1556 per every 10 tests performed according to ASTM D 2922 for correlation of test results. One test shall be made for each 3,000 sq. yds. or less for each layer of specified depth, except areas to receive pavements, for which one test shall be made for each 1,000 sq. yds. or less for each layer. Additional tests shall be made as necessary. All test results shall be made available to the Contracting Officer. Acceptance tests may be made by the Government for verification of compliance; however, the Contractor shall not depend on such tests for his control of operations. Deficiencies in construction shall be corrected by the Contractor.

3.11 FINISHED EXCAVATION, FILLS, AND EMBANKMENTS

All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from either blade-grader operations or scraper operations, except as otherwise specified. The finished surface shall be not more than 0.15 foot above or below the established grade or approved cross section and shall be free of depressed areas where water would pond. The surface of embankments or excavated areas for road construction or other areas to be paved on which a base course or pavement is to

be placed shall not vary more than 0.05 foot from the established grade and approved cross section.

3.12 PROTECTION

During construction, embankments and excavations shall be kept shaped and drained. Ditches and rains along the subgrade shall be maintained in such manner as to drain effectively at all times. Where ruts occur in the subgrade, the subgrade shall be brought to grade, reshaped if required, and recompacted prior to the placing of surfacing. The storage or stockpiling of materials on the subgrade will not be permitted. No surfacing shall be laid until the subgrade has been checked and approved, and in no case shall any surfacing be placed on a muddy subgrade. Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. All work shall be conducted in accordance with the environmental protection requirements of the contract.

3.12.1 Protection of Existing Service Lines and Utilities Structure

Existing utility lines the locations of which are made known to the Contractor prior to excavation that are to be retained, shall be protected from damage during excavation and backfilling, and if damaged, shall be repaired by the Contractor. In the event that the Contractor damages any existing utility lines that are not shown, or the locations of which are not made known to the Contractor, report thereof shall be made immediately to the Contracting Officer. Repairs shall be made by the Contractor. When utility lines that are to be removed or relocated are encountered within the area of operations, the Contractor shall notify the Contracting Officer in ample time for the necessary measures to be taken to prevent interruption of the service.

3.13 ADJUSTMENT OF EXISTING STRUCTURES

All manholes, valve boxes, or inlets of any nature within the project that do not conform to the new finish grade in either surfaced or unsurfaced areas shall be adjusted to the new finish grade. Where inlets, manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, the existing frames and cover shall be removed and replaced with a heavy-duty frame and cover. The structure shall be adjusted as needed to fit the new conditions. All structures shall be of a type suitable for the intended use and shall conform to the requirements of the applicable section of these specifications.

3.14 DISPOSAL REQUIREMENTS

3.14.1 General

Disposal of hazardous wastes shall be in accordance with all local, State, and a Federal soil and hazardous waste laws and regulations, as well as the Resource Conservation and Recovery Act (RCRA), and conditions specified herein. These services shall include all necessary personnel, labor, transportation, packaging, detailed analyses (if required for disposal manifesting or completing waste profile sheets), equipment and reports.

3.14.2 Transportation of Wastes

Transportation shall be provided in accordance with Department of Transportation (DOT) Hazardous Material Regulations and State and local requirements, including obtaining all necessary permits, licenses, and approvals. Evidence that a State licensed hazardous waste transporter is being used shall be included in the SUBMITTALS.

3.14.3 Records

Records shall be maintained of all waste determinations, including appropriate results of analyses performed, substances and sample location, the time of collection, and other pertinent data as required by CFR 40 Part 280, Section 74 and CFR 40 Part 262 Subpart D. Transportation, treatment, disposal methods and dates, the quantities of waste, the names and addresses of each transporter and the disposal or reclamation facility, shall also be recorded and available for inspection, as well as copies or originals of the following documents:

a. Manifests.

b. Waste analyses or waste profile sheet.

c. Certifications of final treatment/disposal signed by the responsible disposal facility official.

Following contract close out, the records shall become the property of the Government.

3.14.4 Hazardous/Special Waste Manifests

For hazardous waste, the Contractor shall utilize a State of Illinois and the US EPA approved manifest system in conformance with the requirements identified in CFR 40 Part 262 and CFR 40 Part 263 so that the wastes can be tracked from generation to ultimate disposal. The manifests shall comply with all of the provision of the transportation and disposal regulations. The contractor shall be responsible for preparing manifests for each load and obtaining the appropriate identification numbers and signatures. The Contracting Officer or his representative will supply the generator number and sign the Generator's Certification if the manifest is accepted. If not acceptable, the Contractor shall make all corrections at no additional cost to the Government. Prior to transportation of the special or hazardous waste, all of the established pretransport requirements shall be met. The wastes shall be transported by a certified special or hazardous waste hauler (i.e., the hauler must have a US EPA or appropriate state special or hazardous waste identification number) in approved containers. All transporters must sign the appropriate portions of the manifest and must comply with all of the provisions established in the DOT and RCRA regulations.

3.14.5 Documentation of Treatment or Disposal

The wastes shall be taken to a treatment, storage, or disposal facility which has EPA or appropriate state permits and hazardous or special waste identification

numbers and complies with all of the provisions of the disposal regulations. Documentation of acceptance of special waste by or the original return copy of the hazardous waste manifest, signed by the owner or operator of a facility legally permitted to treat or dispose of those materials shall be furnished to the Contracting Officer not later than 5 working days following the delivery of those materials to the facility. A statement of agreement from the proposed treatment, storage or disposal facility and certified transporters to accept hazardous or special wastes shall be furnished in the Work Plan. If the Contractor selects a different facility than is identified in the Work Plan, documentation shall be provided for approval to certify that the facility is authorized and meets the standards specified in CFR 40 Part 264.

3.15 SPILLS

3.15.1 Spill Responsibility

Immediate containment actions shall be taken as necessary to minimize effect of any spill or leak. Cleanup shall be in accordance with applicable Federal, State, and local laws and regulations.

3.15.2 Contractor Reporting Requirements

If a spill occurs on the installation the Contractor shall immediately notify the Installation Environmental Coordinator and the Contracting Officer. Off the installation, the contractor shall report spills related to project activities to the National Response Center (NRC), the Installation Environmental coordinator, and the Contracting officer immediately following discovery and shall also comply with applicable State requirements. A written follow-up shall be submitted to the Contracting Officer not later than 7 days after the initial report. The written report shall be in narrative form and as a minimum include the following:

a. Description of the material spilled (including identity, quantity, and manifest number).

b. Whether amount spilled is EPA/State reportable and when and to whom it was reported.

c. Exact time and location of spill, including description of the area involved.

d. Receiving stream or waters.

e. Cause of incident and equipment and personnel involved.

f. Injuries or property damage.

g. Duration of discharge.

h. Containment procedures initiated.

i. Summary of any communications Contractor has with press, agencies, or Government officials other than COR.

j. Description of cleanup procedures employed or to be employed at the site.

SECTION 2552

PORTLAND CEMENT CONCRETE
(REMOVAL, REPLACEMENT AND NEW CONSTRUCTION MATERIALS FOR UTILITY CUTS)

1. APPLICABLE PUBLICATIONS. The publications listed below forms a part of this specification to the extent referenced. The publications are referred to in text by the basic designation only.

1.1. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
T 191-86 Density of Soil In-Place by the Sand-Cone
T 193-81 The California Bearing Ratio

1.2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
d 1557-78 Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. (54-Kg) Hammer and 18-in. (457-mm) Drop

2. MODIFICATION. Except as specified herein, work and materials shall be in accordance with the requirements of the State of Illinois pavement requirements.

3. DEFINITION. Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedures presented in ASTM D1557, Method D. This will be abbreviated hereinafter as percent laboratory maximum density.

4. PAVEMENT REMOVAL. Pavement removal shall be saw cut with an approved concrete saw prior to removal so as to leave a straight true edge. The pavement material and existing base course material shall be removed in such a manner that will not disturb the adjacent in-place material. Adjacent in-place material disturbed or damaged shall be replaced

Pavement material from the removal area shall be disposed of at an approved facility meeting all State and Federal regulations. No material shall be disposed of without prior notification and consent of the Contracting Officer.

5. PAVEMENT REPLACEMENT. The replaced materials shall be placed to the lines and grades of the existing pavement, or as directed by the Contracting Officer. New and replacement materials shall conform to the following:

5.1. PORTLAND CEMENT CONCRETE PAVEMENT. Portland cement concrete pavement shall conform to, and be placed in accordance with the State of Illinois requirements, with the exceptions as follow. Concrete proportioning shall conform to applicable State of Illinois regulations and specifications. The Portland cement shall be Type I or II. In addition, the Portland cement shall meet the optional chemical requirements of ASTM C 150 for Low Alkali. Approval of the Portland cement will be based on current certified mill certificate. Strip insert formed joints shall not be used. The final surface texture shall be a broom finish. All joints shall be sealed in accordance with State of Illinois regulations and specifications.

5.2. AGGREGATE BASE COURSE FOR PORTLAND CEMENT CONCRETE PAVEMENT. The aggregate base courses for Portland cement concrete and bituminous pavement shall conform to, and be placed in accordance with the State of Illinois specifications. The aggregate shall have a minimum California bearing ratio (CBR) of 80 as determined in accordance with AASHTO T 193. The aggregate base course shall be compacted to 100 percent of laboratory maximum density.

5.3. GRANULAR FILTER COURSE. The granular filter course shall conform to, and be placed in accordance with, the requirements of the State of Illinois specifications. The granular filter course shall be compacted to 100 percent of laboratory maximum density.

5.4. PORTLAND CEMENT CONCRETE SIDEWALK. Portland cement concrete sidewalk shall conform to and be placed in accordance with the requirements as specified by the State of Illinois. The Portland cement shall be as specified in paragraph 4.4. Replacement sidewalk shall match existing sidewalk or as directed by the Contracting Officer.

5.5. PORTLAND CEMENT CONCRETE CURB AND GUTTER. Portland cement concrete curb and gutter shall conform to and be placed in accordance with the requirements as specified by the State of Illinois. The Portland cement shall be as specified in paragraph 4.4. Replacement curb and gutter shall match existing curb and gutter or as directed by the Contracting Officer.

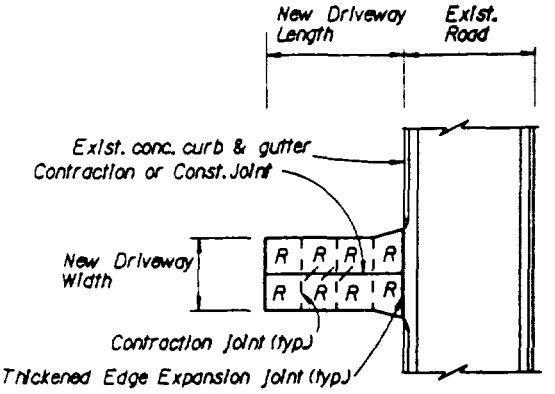
5.6. CRUSHED ROCK SURFACING. (EXISTING REPLACEMENT) Crushed rock surfacing aggregate shall conform to and be placed in accordance with the requirements as specified by the State of Illinois, except as modified herein. Surfacing coarse aggregate shall be Size No. 26. The surfacing aggregate course shall be compacted to 100 percent of laboratory maximum density.

6. SAMPLING AND TESTING. Sampling and testing shall be the responsibility of the Contractor
Sampling and testing shall be performed by an approved testing laboratory
accordance with the State of Illinois.
The Contractor shall submit to the Contracting Officer for approval, the aggregate materials test results, aggregate compaction test results, Portland cement concrete mix design studies, and the bituminous job mix formula plus laboratory tests showing that the mixes meet all requirements specified by the State of Illinois at least 10 working days prior commencing construction.

7. SUBMITTALS. The Contractor shall prepare and submit in the Work Plan a description of all phases of anticipated work required at the site for removal and replacement of concrete for utility cuts.

7.1. CATEGORY II. (For Approval).

Concrete Mix Design and Certified Mill Certificate
Aggregate Test Results
Compaction Test Results

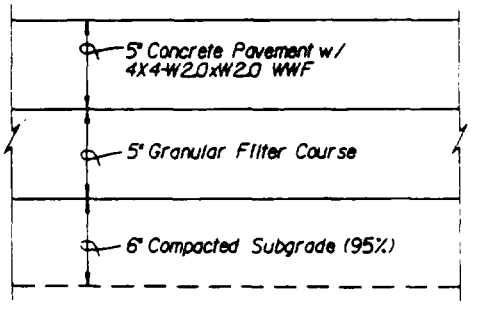


R = 5" thick conc. pavement reinforced with 4x4-W2.0xW2.0 wire welded fabric.

JOINT SPACING FOR CONC. DRIVEWAYS			
CONC. WIDTH	CONTRACTION JOINT SPACING		EXPANSION JOINT SPACING
	TRANSVERSE	LONGITUDINAL	
8'	4'	4'	40' MAX.
10'	5'	5'	40' MAX.
12'	6'	6'	42' MAX.
14'	7'	7'	42' MAX.
16'	8'	8'	42' MAX.

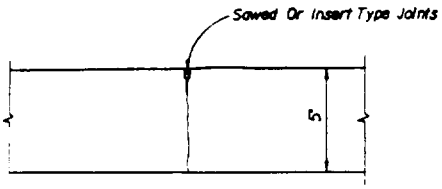
TYPICAL DRIVEWAY JOINT LAYOUT

NO SCALE



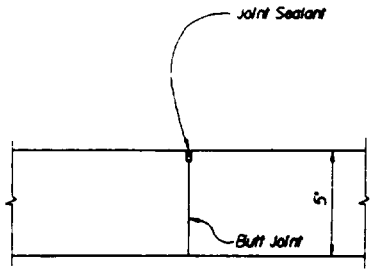
TYPICAL DRIVEWAY PAVEMENT SECTION

NO SCALE



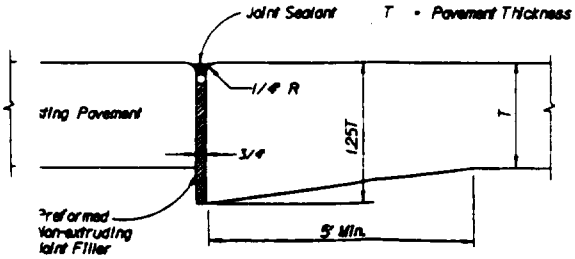
DRIVEWAY CONTRACTION JOINT

NO SCALE



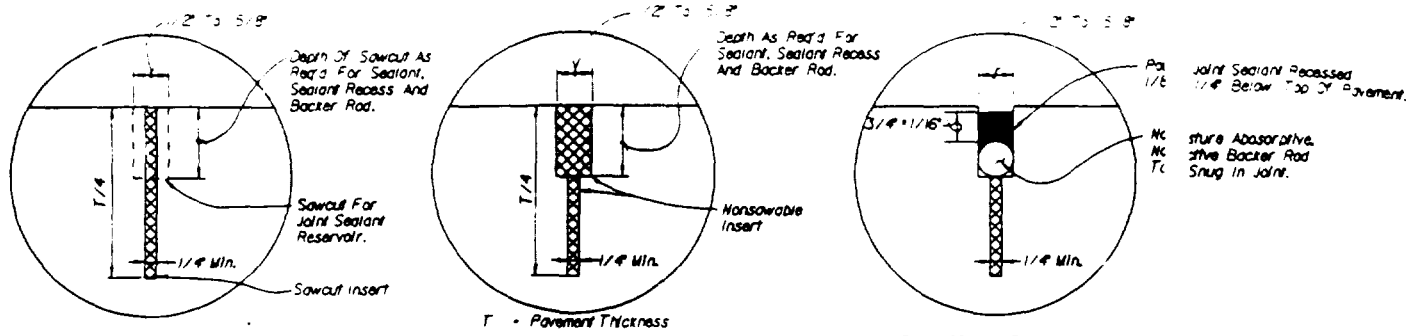
DRIVEWAY CONSTRUCTION JOINT DETAILS

NO SCALE



THICKENED EDGE EXPANSION JOINT

NO SCALE



SAWABLE INSERT INSTALLATION

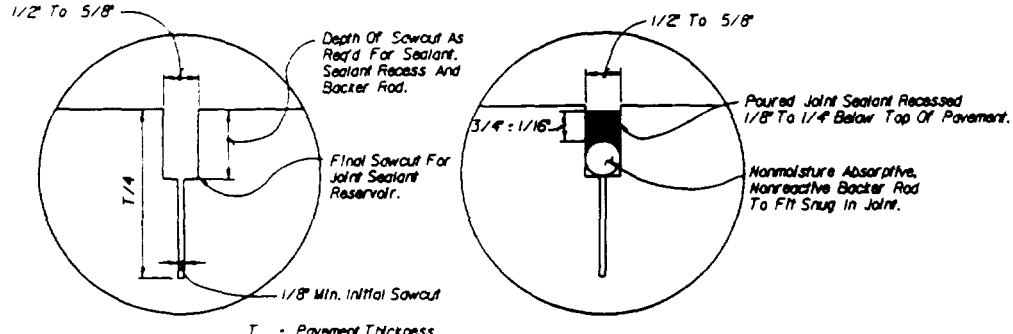
NONSAWABLE INSERT INSTALLATION

T = Pavement Thickness

COMPLETED INSERT INSTALLATI

CONTRACTION JOINT SEALANT DETAILS (INSERT TYPE)

NO SCALE



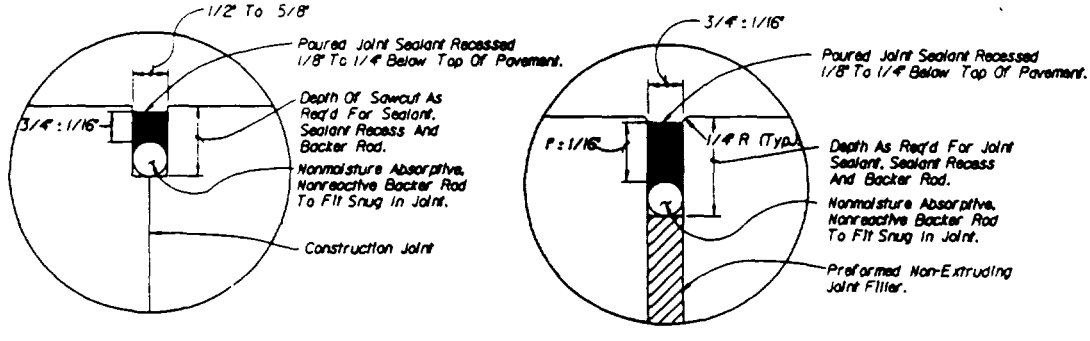
SAWCUT

T = Pavement Thickness

COMPLETED SAWCUT JOINT

CONTRACTION JOINT SEALANT DETAILS (SAWED TYPE)

NO SCALE



COMPLETED CONSTRUCTION JOINT SEALANT DETAIL

NO SCALE

COMPLETED EXPANSION JOINT SEALANT DETAIL

NO SCALE

POURED JOINT SEALANT DETAILS

D Temporary Storage Disposal Facility ("TSDF"). If any lead-contaminated soils yield TCLP analysis greater than 5 mg/L, then they will manifested, transported, and disposed of as RCRA Hazardous Waste at a RCRA subtitle C TSDF. The volume of contaminated soil to be disposed of will depend on the final number of sites, the depth of excavation, the dimensions of each site, and is as yet unknown. Initial estimates have placed the contaminated area at each site to average approximately 5,200 square feet.

1.4.1.2 Lead-Contaminated Decon Rinse Water/PPE.
All byproduct materials used within the exclusion zone(s) shall be considered to be lead contaminated, unless analysis by approved NIOSH methods reveals no contamination. It is anticipated that contaminated byproduct materials will consist of PPE worn on-site and decon rinse water. These wastes shall be manifested, packaged, transported, and disposed of following all appropriate DOT, EPA and State regulations.

PART 2. PRODUCTS - Not applicable.

PART 3. EXECUTION.

3.1. **TRANSPORTATION, STORAGE, AND DISPOSAL OF HAZARDOUS MATERIALS**
The Contractor shall ensure the transportation, storage, and disposal of all hazardous materials complies with all federal, state, and local laws and regulations. The Contractor shall identify and perform analyses necessary to ensure compliance with transportation, storage, and disposal requirements. Although the contractor will not be listed as the "generator" at this project, the contractor shall prepare all generator notification, Waste Profile Sheets, Land Disposal Restriction Notifications/Certifications, and Manifests to comply with the applicable regulations.

3.2. **GENERATOR IDENTIFICATION NOTIFICATION**
The contractor shall make notification before any special/hazardous wastes are generated. The contractor shall prepare and submit the completed notification forms in accordance with 40 CFR 262.12 to the COR USACE for review and followed by signature by the generator, then file a duplicate with the State. The COR shall determine the identity of the generator, for signature purposes, prior to project initiation. The contractor shall contact the State of Illinois to ensure use of the proper notification forms. The contractor shall be responsible for filing an updated generator notification form if the information filed with the department changes. The contractor shall be responsible for providing the state with any additional information requested. This may include information concerning the nature and hazards associated with a particular waste or any information or reports concerning the quantities and disposition of any wastes as necessary to authorize storage, treatment or disposal and to ensure proper special/hazardous waste management.

3.3. **SPILL CONTROL**
The Contractor shall prevent spills and provide contingency measures for cleanup of potential spills during performance of this contract. The Contractor shall:

3.3.1. Take adequate measures to prevent spills during handling, packing, transportation, storage or other operations performed during this contract.

3.3.2. Provide all emergency measures required to contain any spillages and to remove or remediate all wastes or substances that become contaminated due to spillage. If the spill is due to the actions of the contractor or any subcontractor, the contractor shall be responsible for taking all necessary actions at their own expense to correct any and all damage caused by the spill, or shall be liable to the government for all costs incurred or losses suffered by the Government as a result of any and all damage caused by the spill, or some combination of these remedies, at the discretion of the Government.

3.3.2.1. Immediately (within 1 hour) notify the Contracting Officer to discuss contact of the National Response Center.

3.3.2.2. Take immediate measures, utilizing properly protected personnel, to control and contain the spill.

3.3.2.3. Notify verbally within 24 hours the Illinois Emergency Management Agency Hotline, at (800) 782-7860. Follow with a written summary.

3.3.3. Provide all decontamination measures required as a result of the removal of spilled wastes or substances. Decontamination residues shall be properly disposed of as directed by the Contracting Officer.

3.3.4. Provide any necessary engineering controls to eliminate or reduce the entrainment of contaminated material into the air and migration off site by air pathway or surface water runoff.

3.4. **CONTRACTOR PERSONNEL AND QUALIFICATIONS**

The requirements for on-site and off-site personnel in regards transportation and disposal of hazardous waste are listed below.

3.4.0.1. Ensure that all special/hazardous waste is properly transported and disposed at a permitted TSDF in compliance with all applicable Federal, State, and local requirements.

3.4.0.2. Select a RCRA subtitle D permitted landfill at which to dispose of Illinois Special Waste lead contaminated soil. The state shall pre-approve the landfill selection prior to transportation. Select a RCRA subtitle C permitted TSDF at which to treat and dispose of any lead-contaminated Hazardous Waste generated during this project. Selection of the facilities shall be based upon the facility having proper permits for special/hazardous waste to be disposed, the incidence and nature of regulatory enforcement actions involving the facility, environmental compliance, regulatory agency input, and is subject to the Contracting Officer approval.

3.4.0.3. Ensure that all contractor personnel involved in the waste handling are properly trained in packaging, marking, labeling, handling, placarding, storage,

transportation, and disposal requirements of the particular waste as required by federal, state and local laws and regulations.

3.4.0.4. Ensure the facility's permit status when identifying potential TSDFs and prior to actual shipment of waste for each delivery requiring waste treatment, disposal, or storage.

3.4.0.5. Perform quality assurance reviews of all draft and final waste manifests, and certify as correct the Hazardous Waste Manifest, Waste Profile Sheets, Land Disposal Restriction Notification and Certification forms, and all other documents required by Federal, State, or local laws for each shipment of waste required by this contract.

3.4.0.6. Track shipment to ensure receipt of waste in required time frames and completion/ receipt of any associated reports as required (i.e. discrepancy reports, certificates of disposal).

3.4.0.7. Ensure that all Discrepancy and Exception Reports are completed in accordance with 40 CFR 264.72, 265.72, and 262.62 (See paragraph: "Discrepancy Reports" and "Exception Reports").

3.4.0.8. Develop procedures to track transportation and disposal of hazardous waste for each Contractor's regional offices (i.e. comprehensive Transportation and Disposal Tracking Form).

3.4.0.9. Periodic site visit to perform quality assurance checks during packaging, marking, labeling, handling, placarding, and shipment phase of the project.

3.4.0.10. Maintaining close communication and coordination with USACE's Regulatory Specialist.

3.4.0.11. Draft *hazardous waste transportation and disposal*\ submittal pertaining to regulatory issues.

3.4.0.12. Draft *Waste Analysis Plan*\ as required.

3.4.0.13. Assure compliance and smooth transitions necessary for the implementation of new D.O.T. requirements (i.e. hazard communication, Performance Oriented Packaging, DOT training per 49 CFR 172.700, etc.). Since this project follows the effective date (October 1, 1993), the Contractor is required to use the "new" 49 CFR 172.101 tables.

3.4.0.14. Maintain familiarity and understanding of Federal, State and local laws and regulations pertaining to handling of all types of solid or hazardous waste. Become informed of all new or changed requirements, disseminate the information to appropriate contractor personnel, and assure implementation, whenever required.

3.4.1. **ON-SITE PERSONNEL**
The contractor shall identify in the *hazardous waste transportation and disposal*\ submittal, an individual within his organization who shall ensure and certify that on-site procedures for transportation and disposal ("T&D") of hazardous and special wastes are implemented and enforced on each site. This T&D individual shall be onsite any time special/hazardous waste is loaded and transported off-site. An alternate shall be identified in the *hazardous waste transportation and disposal*\ submittal to serve in the event of the primary's absence. The identification and training requirements for the alternate shall be the same as the primary.

The Contractor's on-site person overseeing the transporter prior to shipment shall ensure and certify that the packaging, marking, labeling, handling, and placarding of waste complies with Federal, State, and local laws and regulations and it correlates with the waste classification and quantities designated on the manifest prior to the signature of the Transporter.

The On-site person responsible for certification shall be trained as per 49 CFR 172.700. The on-site person's name and qualifications (previous experience and training) shall be described in the *hazardous waste transportation and disposal*\ submittal for approval. Changes shall be approved by the Contracting Officer.

3.5. **OFF - SITE TREATMENT AND DISPOSAL**
The contractor shall follow all of the following requirements for off-site treatment and disposal of hazardous wastes generated during this project:

3.5.1. **Pre-transport Requirements**
The Contractor shall follow all Pre-Transport requirements as identified in 40 CFR 262 Subpart C.

3.5.2. **Transportation**
Transportation to an approved treatment, storage, and disposal facility (TSDF) or approved incinerator shall comply with all appropriate DOT regulations. The Contractor shall judiciously coordinate the transportation of waste so that transporters arrive on schedule. Within the *Hazardous Waste Transportation and disposal*\ submittal, the Contractor shall provide the name, location, point-of-contact of the transporter, and verify the transporter is a licensed Hazardous Waste Transporter in accordance with DOT regulations. The transporter is also required to hold a current, valid waste hauling permit issued by the IEPA Permit Section, ((217)524-3300) prior to transporting Illinois Special Waste.

3.5.3. **Identification of the Disposal Facility**
The Contractor shall provide within the *Hazardous Waste Transportation and disposal*\, the name, location, point-of-contact, identification, and N.O.V. status of the selected disposal facility. In the event that the contractor chooses to use more than one disposal facility, all of the required information shall be submitted for all facilities.

3.5.4. **Analytical and Manifest Package**
The Contractor shall provide the analytical and the *complete manifest package*\ as required in Paragraph: "Complete Manifest Package".

3.5.5. **Shipment Tracking**
The Contractor shall notify the Contracting Officer if shipments to the TSDF are within the required time frames and provide all required reports if receipt has been delayed (i.e. discrepancy reports or exception reports, see Paragraphs: "Discrepancy Reports" and "Exception Reports" for details).

3.5.6. **Tracking of Hazardous Wastes**
Hazardous wastes shall be removed from the site by the Contractor and disposed of at the facilities selected. The Contractor shall receive written acceptance from the TSDF prior to mobilization for transportation and disposal (T&D). The Contractor shall utilize a tracking system acceptable to the Contracting Officer. This can be the tracking system provided in this section, or a different approved system if submitted in the *Hazardous waste Transportation and Disposal*\ submittal.

3.5.7. ***Complete Manifest Package***
The "complete manifest package" consists of, at a minimum, all hazardous waste manifests, hazardous material shipping papers, waste profile sheets, any applicable land disposal restriction notification and certification forms, decision logic used in completing package, and all other supporting documentation. Supporting documentation shall include waste disposal history, all analytical results, material safety data sheets available, and any other information received in identifying the proper waste code(s). The Contractor shall also include as part of the supporting documentation, the specific type of inner and outer packaging, markings, labeling, and placards offered to the transporter. The Contractor shall also comply with the requirements below.

3.5.7.1. **Preparation**
The Contractor shall review the complete manifest package and shipping documentation. The contractor's designated T&D on-site person shall certify as correct the Hazardous Waste Manifest, Waste Profile Sheets, and Land Disposal Restriction Notification and Certification forms and supporting documentation. Once the review is completed, the Contractor shall submit these documents to the Contracting Officer for approval.

3.5.7.2. **Submittal**
The contractor shall submit to the Contracting Officer Representative (COR) for approval, a reproducible copy of the *complete manifest package*\ for each particular waste stream. The Contractor shall hold the original *complete manifest package*\ and make corrections based on Contracting Officer approval (see Paragraph: "Approval") prior to submittal to the generator's representative for signature. Submittals that are disapproved will be returned to the Contractor to be revised. The submittal of the *complete manifest package*\ shall be attached to FORM 4025 (see Paragraph: "Transmittal Form (Form 4025)" for additional submittal details).

3.5.7.3. **Approval**
The Contractor shall not transport or ship any wastes prior to Contracting Officer approval of the *complete manifest package*\. The Government will make every effort to conduct the approval process within five (5) working days after the Contracting Officer receives the complete manifest package. If the regulators are unavailable or extensive review of Federal or State law is required, the Government reviewer will notify the COR of any delays on or before the second day of the review and arrange for an alternate review period agreeable to both parties. After the review process is completed, the Contracting Officer shall telecopy to the contractor and the COR the completed FORM 4025.

3.5.7.4. **Designation of Generator**
The generator and signer of Hazardous Waste Manifests, Waste Profile Sheets and Land Disposal Restriction Notifications and Certifications shall be identified by the Contracting Officer during the preconstruction conference. The Contractor shall submit a fully executed and *complete manifest package*\, including final disposition information, covering all special/hazardous waste disposal under this contract as an appendix in the *Final Project Report*\ covering the field activities, as well as the above information and quantities shipped.

3.5.7.5. **Transportation of the Manifested Waste**
The Contractor's on-site personnel overseeing the transporter prior to shipment of the special/hazardous waste shall certify that the packaging, marking, labeling, handling, and placarding of waste complies with Federal, State, and local laws and regulations and it correlates with the waste classification and quantities designated on the manifest prior to the signature of the Transporter. The certification shall be submitted to the COR prior to transport and included as part of the *Final Project Report*\. The On-site T&D person responsible for certification shall be trained as per 49 CFR 172.700.

3.5.8. **Transmittal Form (Form 4025)**
The transmittal form (Form 4025) shall be used for submitting the *complete manifest package*\ for Government approval in accordance with the instructions on the reverse side of the form. This form shall be properly completed by filling out all the heading blank spaces of Section I of the form and identifying each item submitted.

3.5.9. **Reporting Requirements**
The contractor shall be responsible for completing all reporting requirements required for this contract. The contractor shall identify all state regulations in addition to the requirements listed below.

3.5.9.1. **Hazardous Waste Manifest Annual and/or Biennial Reporting Requirements**
All information necessary to file the Annual and/or Biennial reports shall be prepared and submitted by the Contractor to the Contracting Officer for each project to meet all requirements of 40 CFR 262.41 and any other applicable Federal or State law or regulation, as a part of the *Final Project Report*\. These report sections shall contain all the information necessary for the filing of the formal report in the form and format required by the governing Federal or State regulatory agency. A cover letter shall accompany the report to include

the Contract number; Contractor name; project name; location of project; report type; and date of submittal.

3.5.9.2. **Tabulated Waste Handling Information**
The Contractor shall list all waste materials going off-site including the description, quantity, destination, purpose, the hazardous waste classification, when the waste was manifested, samples taken, results, transportation plans, disposal facility, etc. This information shall be included in the *Final Project Report*\.

3.5.9.3. **State Reporting Requirements**
The Contractor shall determine the State reporting requirements (i.e. generator State and disposal State) and obtain current State reporting forms. Completed draft of all required forms, with applicable attachments, shall be submitted to the Contracting Officer for approval prior to submission to the Federal or State Regulator. The State reporting forms shall also be included within the *Final Project Report*\. NOTE: For in-state T&D, while a complete IL manifest shall be completed prior to the transportion and disposal of IL Special Waste, a copy of the completed manifest is not required to be submitted to the State. The receiving TSDF shall provide the manifest copy. For verification, contact IEPA Manifest Section, (217) 782-5563.

3.5.9.4. **Transportation and Disposal Tracking Form**
The Contractor shall complete the Transportation and Disposal Tracking Form. This form allows the tracking of key T&D milestones throughout the performance of this contract. The form lists all waste materials going off-site. When tracking the waste the Contractor shall identify the date that the transporter accepts the waste by their signature on the manifest.

3.5.9.5. **Discrepancy Reports**
Discrepancies due to differences between the quantities or types of hazardous waste designated on the manifest or shipping papers, and the quantity or type of hazardous waste a facility actually receives shall be reported to the Contracting Officer and rectified by the Contractor within 15 days after receiving the waste in accordance with 40 CFR 264.72 and 40 CFR 265.72. This information shall be presented in the *Final Project Report*\.

3.5.9.6. **Exception Reports**
The Contractor shall verify if the generator or generator representative has received a copy of the signed manifest from the TSDF on or before the 35th day after transporter signature in accordance with 40 CFR 262.42. If the generator or generator's representative has failed to receive a signed copy of the manifest by the 44th day, the contractor shall prepare a draft EPA exception report for Contracting Officer approval. The Final exception report shall be submitted to the Contracting Officer no later than Day 45. This information shall also be presented in the *Final Project Report*\. Prior to official submittal of Exception Report, a draft copy of the report shall be submitted to the Contracting Officer for review. The Government will make every effort to conduct the approval process within three (3) working days after the Contracting Officer receives the complete Exception Report.

3.6. REGULATOR NOTICES OF NON-COMPLIANCE

In the event the contractor is notified by a Federal, State, or local agent that a manifest, shipment, waste disposal, or any related activity concerning this contract is not in order or not in compliance with any requirement, the contractor shall notify the Contracting Officer immediately. The contractor shall furnish to the Government copies of all notices and all relevant documents, including correspondence, subcontracts, lab reports, memoranda, etc. and any other documents requested by the Government. The contractor shall coordinate its response to the notice with the Contracting Officer or his designated representative prior to submission to the notifying authority, and shall furnish a copy to the Contracting Officer of all documents submitted to the authority, included the final reply to the notice.

SECTION 02935
TURF
06/90

Attachments: Sodding Methods, Std. Dwg. No. 16-10-01, Sheet 1

PART 1 GENERAL

1.1 SUMMARY

The specified sod varieties shall be laid over all ground areas disturbed by grading and or construction and not otherwise surfaced. Sod shall be laid on those areas shown on the drawings and as specified. The Contractor shall notify the Contracting Officer at least 2 weeks prior to sodding operations.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AGRICULTURAL MARKETING SERVICE (AMS)

AMS-01 (Amended Thru: Aug 1988) Federal Seed Act Regulations (Part 201-202)

AMERICAN SOD PRODUCERS ASSOCIATION (ASPA)

Guideline Specifications To Sodding

COMMERCIAL ITEM DESCRIPTION (CID)

CID A-A-1909 (Basic) Fertilizer

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only.

SD-08 Statements

Delivery; *FIO*.

Delivery schedule, at least 10 days prior to the intended date of the first delivery.

Maintenance Report; *FIO*.

Written record of all maintenance work performed during the turf establishment period shall be submitted to the Contracting Officer.

Turf Establishment Period\; *FIO*\.

Written calendar time period for the turf establishment period. When there is more than one turf establishment period, the boundaries of the turfed area covered for each period shall be described.

SD-13 Certificates\

Certificates of compliance certifying that materials meet the requirements specified, prior to the delivery of materials. Certified copies of the reports for the following materials shall be included:

Sod compliance\; *GA2*\.

Sod shall be inspected upon arrival at the job site by the Contracting Officer for conformity to required species, mixture percentage, percent purity and field location in accordance with paragraph MATERIALS. Unacceptable materials shall be removed from the job site.

Fertilizer Analysis\; *FIO*\.

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis and percent composition. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

Notify the Contracting Officer, in writing, 10 days prior to the first delivery.

1.4.1.1 Protection

Sod shall be protected from drying out and contamination during delivery.

1.4.2 Inspection

Sod shall be inspected upon arrival at the job site by the Contracting Officer for conformity to type and quality in accordance with paragraph MATERIALS. Topsoil, Fertilizershall be inspected for meeting specified requirements and unacceptable materials shall be removed from the job site.

1.4.3 Storage

Materials shall be stored in areas designated by the Contracting Officer. Sod shall be lightly sprinkled with water, covered with moist burlap, straw, or other covering and protected from exposure to wind and direct sunlight until planted. Covering for sod shall allow air to circulate and prevent internal heat from building up. Fertilizer shall be stored in cool, dry locations away from contaminants.

1.4.4 Handling

1.4.4.1 Materials

Care shall be taken to avoid injury to sod. Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

1.4.4.2 Sod Placement Time Limitation

Limitation of the time between harvesting and placing of sod shall be 36 hours.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Sod

2.1.1.1 Sod Classification

State-approved, Nursery-grown sod shall be provided as classified by applicable state laws. Each individual sod section shall be of a size to permit rolling and lifting without breaking.

2.1.1.2 Sod Grass Species

Sod shall be locally grown and consist of grass species that are hardy to the area. Sod shall be composed of a mixture of Improved varieties of Kentucky Bluegrass with either Perennial Ryegrass and/or Creeping Red Fescue.

2.1.1.3 Quality

The sod shall be relatively free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than 1 inches in any dimension, woody plant roots and other material detrimental to a healthy stand of turf. Sod that has become dry, moldy, or yellow from heating, or has irregularly shaped pieces of sod and torn or uneven ends shall be rejected.

2.1.1.4 Thickness

Sod shall be machine cut to a uniform thickness of 1-1/4 inches within a tolerance of 1/4 inch, excluding top growth and thatch. Measurement for thickness shall exclude top growth and thatch.

2.1.1.5 Anchors

Sod anchors shall be as recommended by the sod supplier.

2.1.2 Soil Amendments

Soil amendments shall consist of Fertilizer meeting the following requirements.

2.1.2.1 Fertilizer

Fertilizer shall be commercial grade, free flowing, low in salts, uniform in composition and conforming to CID A-AA-1909. Granular Fertilizer: As recommended by the soil test. Consists of nitrogen-phosphorus-potassium, ratio: 16 parts nitrogen, 48 parts phosphorus, and 0 parts potassium. When Slow release nitrogen forms are used in the fertilizer mixture they shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer coated prills, or isobutylenediurea (IBDU).

2.1.3 Topsoil

If additional topsoil is required beyond that available from grading operations, it shall be furnished by the Contractor and shall be a natural, friable soil representative of productive soils in the vicinity, and approved by the Contracting Officer. It shall be obtained from well-drained areas and shall be free of any admixture of subsoil, foreign matter, objects larger than 1 inch in any dimension, toxic substances, and any material or substance that may be harmful to plant growth. Topsoil shall be in accordance with Section 02210 GRADING.

2.1.4 Water

Water shall not contain elements toxic to plant life and shall be obtained from an approved source prior to use.

PART 3 EXECUTION

3.1 SODDING TIMES AND CONDITIONS

3.1.1 Sodding Time

Sod shall be placed from May 1 to Nov 30.

3.1.2 Environmental Conditions

Sodding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the operations, proposed times shall be submitted to and approved by the Contracting Officer.

3.2 SITE PREPARATION

3.2.1 Grading

The Contracting Officer shall verify that finished grades are as indicated on the drawings, and the placing of topsoil and smooth grading have been completed in accordance with Section 02210 GRADING. Any deviations therefrom shall be

corrected prior to soddding. Soil used for repair of erosion and correction of grade deficiencies shall conform to that specified in the paragraph Topsoil.

3.2.2 Tillage

3.2.2.1 Minimum Depth

Soil on slopes gentler than 3-horizontal-to-1-vertical shall be tilled to a minimum depth of 6 inches. On slopes between 3-horizontal-to-1-vertical and 1-horizontal-to-1 vertical, the soil shall be tilled to a minimum depth of 2 inches by scarifying with heavy rakes, rotating chains drawn by tractor from the top of the slope or by other approved methods. Rototillers shall be used where soil conditions and length of slope permit. On slopes 1-horizontal-to-1 vertical and steeper, no tillage is required.

3.2.3 Finished Grading

3.2.3.1 Preparation

Turf areas shall be filled as needed or have surplus soil removed to attain the finished grade. Drainage patterns shall be maintained as indicated on drawings. Turf areas compacted by construction operations shall be completely pulverized by tillage. Finished grades adjacent to walks, curbs, pavements, shall be 1 inch below the adjoining surfaced area. New soil surfaces shall be blended to meet existing soil surfaces.

3.2.3.2 Lawn Area Debris

Lawn areas shall have debris and stones larger than 1 inch in any dimension removed from the surface.

3.2.3.3 Protection

Finished graded areas shall be protected from damage by vehicular or pedestrian traffic and erosion.

3.2.4 Application of Soil Amendments

3.2.4.1 Fertilizer

Fertilizer shall be applied at a rate of 1 pound of actual nitrogen per 1,000 square feet. When tillage is not required fertilizer may be broadcast prior to sodding. Fertilizer shall be incorporated into the soil to a minimum depth of 6 inches or may be incorporated as part of the tillage operation.

3.3 SODDING

3.3.1 General

Areas shall be sodded as indicated. Adequate soil moisture shall be ensured prior to sodding by spraying water on the area to be sodded and wetting the soil to a minimum depth of 1 inch. Sod that has become dry, moldy, or yellow from

heating will be rejected. Sod shall be installed as shown on attached Standard Drawing No. 16-10-01, sheet 1.

3.3.2 Placing Sod

Rows of sod shall be placed parallel to and tightly against each other. Joints shall be staggered laterally. The sod strips shall not be stretched or overlapped. All joints shall be butted tight. Voids and air drying of roots shall be prevented. On long slopes, sod shall be laid at right angles to slopes. In ditches, sod shall be laid at right angles to the flow of water. When required, the sod shall be anchored by placing anchors a minimum distance of 2 feet on center with a minimum of 2 anchors per sod section.

3.3.3 Finishing

Air pockets shall be eliminated and a true and even surface shall be provided by tamping or rolling the sod in place. Displacement of the sod shall be assured by knitting of sod to the soil. Frayed edges shall be trimmed and holes or missing corners shall be patched in the sod.

3.3.4 Watering Sod

Watering shall be started immediately after completing each day of sodding. Water shall be applied at a rate sufficient to ensure moist soil conditions to a minimum depth of 2 inches. Run-off and puddling shall be prevented.

3.4 RESTORATION AND CLEAN UP

3.4.1 Restoration

Existing turf areas, pavements and facilities that have been damaged from the turfing operation shall be restored to original condition.

3.4.2 Clean Up

Excess and waste material shall be removed from the planting operation and shall be disposed of off the site. Adjacent paved areas shall be cleaned.

3.5 PROTECTION OF TURFED AREAS

Immediately after sodding operations have been completed, the area shall be protected against traffic or other use by erecting barricades and providing signage as required or as directed by the Contracting Officer to provide protection against traffic and trespass.

3.6 *TURF ESTABLISHMENT PERIOD*\

3.6.1 Commencement

The Turf Establishment Period for establishing a healthy stand of turf shall begin on the first day of work under this contract and shall end 30 days after the last day of sodding operations required by this contract or until all work

on this entire Contract has been completed and accepted, whichever period is longer.

3.6.1.1 Sodded Area

A satisfactory stand of turf from the sodding operation is defined as living sod, a uniform green, non-yellow or bleached color and healthy uniform leaf texture. Bare spots shall be no larger than 4 inches square. The total bare spots shall not exceed more than 1 percent of the area.

3.6.2 Maintenance During Turf Establishment Period

3.6.2.1 General

Maintenance of the turfed areas shall include protecting turfed areas from traffic,mowing, watering, post-fertilization.

3.6.2.2 Mowing

Lawn Areas: Lawn areas shall be mowed to a minimum height of 2-1/2 inches when the average height of the turf becomes 4 inches. Clippings shall be removed when the amount of cut turf is heavy enough to damage the turfed areas.

3.6.2.3 Watering

Frequency of watering and quantity of water shall be adjusted in accordance with the growth of the turf. Run-off, puddling and wilting shall be prevented. Overwatering of the grass shall be prevented to avoid drowning Landscape Material.

3.6.2.4 Post-Fertilization

Nitrogen carrier fertilizer shall be applied at the rate of one pound of actual nitrogen per 1,000 square feet prior to the final acceptance. The application shall be timed prior to the advent of winter dormancy and shall avoid excessively high nitrogen levels.

3.6.2.5 Repair

The Contractor shall re-establish as specified herein, eroded, damaged or barren areas.

3.6.2.6 Maintenance Report

A written record shall be furnished to the Contracting Officer of the maintenance work performed.

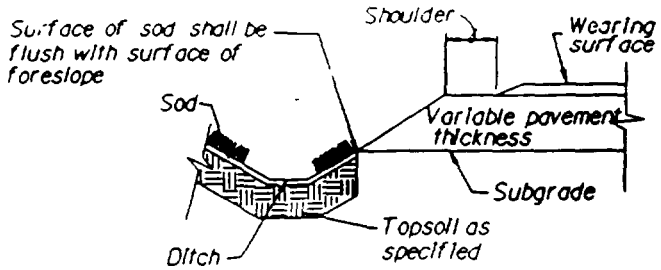
3.7 FINAL ACCEPTANCE

3.7.1 Preliminary Inspection

Prior to the completion of the Turf Establishment Period, a preliminary inspection shall be held by the Contracting Officer. Time for the inspection shall be established in writing. The acceptability of the turf in accordance with the Turf Establishment Period shall be based upon a stand of grass as defined in the paragraph Satisfactory Stand of Turf. An unacceptable stand of turf shall be repaired as soon as turfing conditions permit. Rejected areas shall be replanted and repaired as directed by the Contracting Officer.

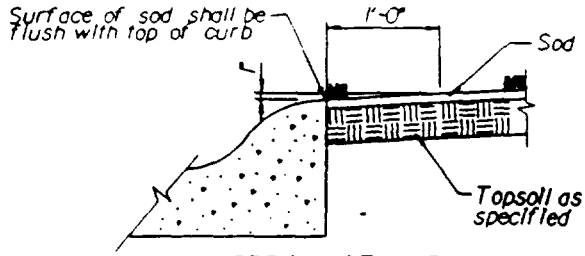
3.7.2 Final Inspection

A final inspection shall be held by the Contracting Officer to determine that deficiencies noted in the preliminary inspection have been corrected. Time for the inspection shall be established in writing. The Contractor shall restore any area damaged by the Contractor's personnel or equipment after final acceptance. This includes damage that may occur during construction or required adjustments for the completion of this project whether or not such work occurs after Government use and or acceptance. Restoration shall meet the requirements of the contract drawings and specifications.



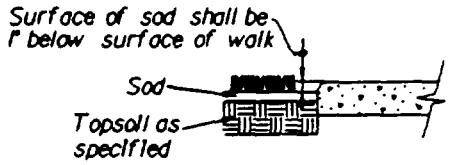
SODDING ALONG ROADWAY

NO SCALE



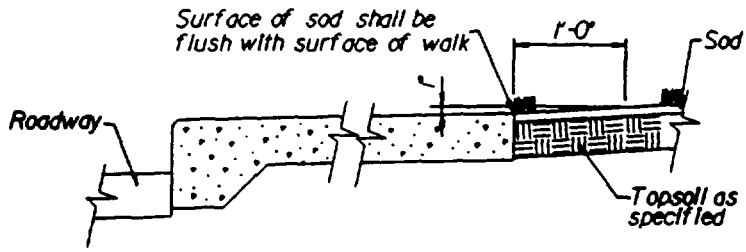
SODDING AT CURB

NO SCALE



SODDING AT SINGLE-PURPOSE WALK

NO SCALE



SODDING AT DOUBLE-PURPOSE WALK

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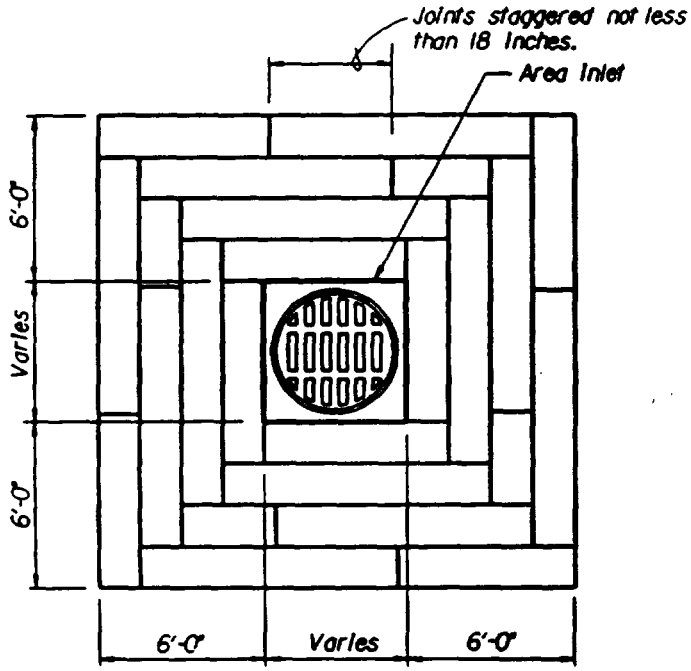
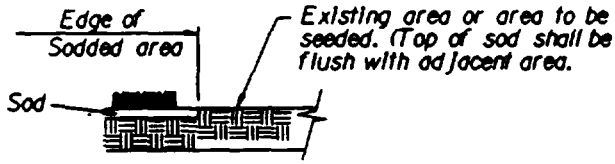


SODDING AROUND AREA INLETS

NO SCALE



SODDING IN LAWN AREAS

NO SCALE

SODDING METHODS

DWG. NO. 16-10-01 SHEET NO. 1

NO SCALE REVISED OCT. 1991